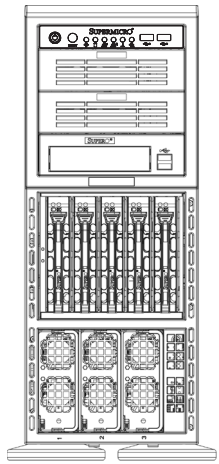
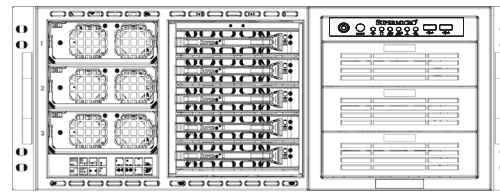
SUPERO®

SC748 Chassis Series





SC748TQ-R1200B

SC748TQ-R1400B

SC748TQ-R1K43B

USER'S MANUAL

1.0a

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California Best Management Practices Regulations for Perchlorate Materials: This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. "Perchlorate Material-special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate"

WARNING: Handling of lead solder materials used in this product may expose you to lead, a chemical known to the State of California to cause birth defects and other reproductive harm.

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Preface

About This Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the SC748 4U chassis. Installation and maintenance should be performed by experienced technicians only.

Supermicro's SC748 4U chassis features a unique and highly-optimized design for dual-core Xeon platforms. The chassis is equipped with a redundant 1000 or 12000 Watt high-efficiency power supply for superb power savings. 3 hot-swappable high-performance fans provide ample optimized cooling for the chassis and 5 hot-swap drive bays and 3 peripheral drive bays offer maximum storage capacity in a 4U form factor.

This document lists compatible parts available when this document was published. Always refer to the our Web site for updates on supported parts and configurations.

Manual Organization

Chapter 1: Introduction

The first chapter provides an introduction to the chassis and contact information.

Chapter 2: Warning Statements forf AC Systems

This chapter lists warnings, precautions, and system safety. You should thoroughly familiarize yourself with this chapter for a general overview of safety precautions that should be followed before installing and servicing this chassis.

Chapter 3: Chassis Components

See this chapter for details on this chassis components.

Chapter 4: System Interface

Refer to this chapter for details on the system interface, which includes the functions and information provided by the control panel on the chassis as well as other LEDs located throughout the system.

Chapter 5: Chassis Setup and Maintenance

Refer to this chapter for detailed information on this chassis. You should follow the procedures given in this chapter when installing, removing, or reconfiguring your chassis.

Chapter 6: Rack Installation

Refer to this chapter for detailed information on chassis rack installation. You should follow the procedures given in this chapter when installing, removing or reconfiguring your chassis into a rack environment.

Compatible Backplanes

This section lists compatible cables, power supply specifications, and compatible backplanes. Not all compatible backplanes are listed. Refer to our Web site for the latest compatible backplane information.

Appendix A: Chassis Cables

Appendix B: Power Supply Specifications

Appendix C: MT35TQ Mobile Rack Specifications

Appendix D: MT35S and MT35T Mobile Rack Specifications

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Chapter 1

Introduction

1-1 Overview

Supermicro's SC748 4U chassis features a unique and highly-optimized design. The chassis is equipped with high efficiency power supply. High performance fans provide ample optimized cooling for FB-DIMM memory modules, 5 hot-swap drive bays and 3 peripheral drive bays offer maximum storage capacity in a 4U form factor.

1-2 Shipping List

Part Numbers

Please visit the following link for the latest shipping lists and part numbers for your particular chassis model http://www.supermicro.com/products/chassis/4U/?chs=748

SC748 Chassis			
Model	**HDD**	**I/O Slots**	**Power Supply**
SC748TQ-R1K43B	5x SAS/SATA	7x FF	1400W Redundant (Platinum level)
SC748TQ-R1400B	5x SAS/SATA	7x FF	1400W Redundant (Gold level)
SC748S-R1200B	5x SAS/SATA	7x FF	1200W Redundant

1-3 Contacting Supermicro

Headquarters

Address:	Super Micro Computer, Inc.
	980 Rock Ave.
	San Jose, CA 95131 U.S.A.
Tel:	+1 (408) 503-8000
Fax:	+1 (408) 503-8008
Email:	marketing@supermicro.com (General Information)
	support@supermicro.com (Technical Support)
Web Site:	www.supermicro.com

Europe

Address:	Super Micro Computer B.V.
	Het Sterrenbeeld 28, 5215 ML
	's-Hertogenbosch, The Netherlands
Tel:	+31 (0) 73-6400390
Fax:	+31 (0) 73-6416525
Email:	sales@supermicro.nl (General Information)
	support@supermicro.nl (Technical Support)
	rma@supermicro.nl (Customer Support)
Web Site:	www.supermicro.com

Asia-Pacific

Address:	Super Micro Computer, Inc.
	3F, No. 150, Jian 1st Rd.
	Zhonghe Dist., New Taipei City 235
	Taiwan (R.O.C)
Tel:	+886-(2) 8226-3990
Fax:	+886-(2) 8226-3992
Email:	support@supermicro.com.tw
Tel:	+886-(2)-8226-3990
Web Site:	www.supermicro.com.tw

1-4 Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

For faster service, RMA authorizations may be requested online (http://www.supermicro.com/support/rma/).

Whenever possible, repack the chassis in the original Supermicro carton, using the original packaging material. If these are no longer available, be sure to pack the chassis securely, using packaging material to surround the chassis so that it does not shift within the carton and become damaged during shipping.

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

Notes

Chapter 2

Standardized Warning Statements for AC Systems

2-1 About Standardized Warning Statements

The following statements are industry standard warnings, provided to warn the user of situations which have the potential for bodily injury. Should you have questions or experience difficulty, contact Supermicro's Technical Support department for assistance. Only certified technicians should attempt to install or configure components.

Read this appendix in its entirety before installing or configuring components in the Supermicro chassis.

These warnings may also be found on our web site at http://www.supermicro.com/about/policies/safety_information.cfm.

Warning Definition

Warning!

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

警告の定義

この警告サインは危険を意味します。

人身事故につながる可能性がありますので、いずれの機器でも動作させる前に、

電気回路に含まれる危険性に注意して、標準的な事故防止策に精通して下さい。

此警告符号代表危险。

您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾的声明号码找到此设备的安全性警告说明的翻译文本。

此警告符號代表危險。

您正處於可能身體可能會受損傷的工作環境中。在您使用任何設備之前，請注意觸電的危險，並且要熟悉預防事故發生的標準工作程序。請依照每一注意事項後的號碼找到相關的翻譯說明內容。

Warnung

WICHTIGE SICHERHEITSHINWEISE

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung vor Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

BEWAHREN SIE DIESE HINWEISE GUT AUF.

INSTRUCCIONES IMPORTANTES DE SEGURIDAD

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

GUARDE ESTAS INSTRUCCIONES.

IMPORTANTES INFORMATIONS DE SÉCURITÉ

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

CONSERVEZ CES INFORMATIONS.

תקנון הצהרות אזהרה

הצהרות הבאות הן אזהרות על פי תקני התעשייה, על מנת להזהיר את המשתמש מפני חבלה פיזית אפשרית. במידה ויש שאלות או היתקלות בבעיה כלשהי, יש ליצור קשר עם מחלקת תמיכה טכנית של סופרמיקרו. טכנאים מוסמכים בלבד רשאים להתקין או להגדיר את הרכיבים.

יש לקרוא את הנספח במלואו לפני התקנת או הגדרת הרכיבים במארזי סופרמיקרו.

تحذير! هذا الرمز يعني خطر انك في حالة يمكن أن تتسبب في اصابة جسدية .
قبل أن تعمل على أي معدات،كن على علم بالمخاطر الناجمة عن الدوائر
الكهربائية
وكن على دراية بالممارسات الوقائية لمنع وقوع أي حوادث
استخدم رقم البيان المنصوص في نهاية كل تحذير للعثور ترجمتها

안전을 위한 주의사항

경고!

이 경고 기호는 위험이 있음을 알려 줍니다. 작업자의 신체에 부상을 야기 할 수 있는 상태에 있게 됩니다. 모든 장비에 대한 작업을 수행하기 전에 전기회로와 관련된 위험요소들을 확인하시고 사전에 사고를 방지할 수 있도록 표준 작업절차를 준수해 주시기 바랍니다.

해당 번역문을 찾기 위해 각 경고의 마지막 부분에 제공된 경고문 번호를 참조하십시오

BELANGRIJKE VEILIGHEIDSINSTRUCTIES

Dit waarschuwings symbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij een elektrische installatie betrokken risico's en dient u op de hoogte te zijn van de standaard procedures om ongelukken te voorkomen. Gebruik de nummers aan het eind van elke waarschuwing om deze te herleiden naar de desbetreffende locatie.

BEWAAR DEZE INSTRUCTIES

Installation Instructions

Warning!

Read the installation instructions before connecting the system to the power source.

設置手順書

システムを電源に接続する前に、設置手順書をお読み下さい。

警告
将此系统连接电源前,请先阅读安装说明。

警告
將系統與電源連接前，請先閱讀安裝說明。

Warnung

Vor dem Anschließen des Systems an die Stromquelle die Installationsanweisungen lesen.

¡Advertencia!

Lea las instrucciones de instalación antes de conectar el sistema a la red de alimentación.

Attention

Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.

.יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

Raadpleeg de installatie-instructies voordat u het systeem op de voedingsbron aansluit.

Circuit Breaker

Warning!

This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 250 V, 20 A.

サーキット・ブレーカー

この製品は、短絡(過電流)保護装置がある建物での設置を前提としています。

保護装置の定格が250 V、20 Aを超えないことを確認下さい。

警告

此产品的短路(过载电流)保护由建筑物的供电系统提供,确保短路保护设备的额定电流不大于250V,20A。

警告

此產品的短路(過載電流)保護由建築物的供電系統提供,確保短路保護設備的額定電流不大於250V,20A。

Warnung

Dieses Produkt ist darauf angewiesen, dass im Gebäude ein Kurzschluss- bzw. Überstromschutz installiert ist. Stellen Sie sicher, dass der Nennwert der Schutzvorrichtung nicht mehr als: 250 V, 20 A beträgt.

¡Advertencia!

Este equipo utiliza el sistema de protección contra cortocircuitos (o sobrecorrientes) del edificio. Asegúrese de que el dispositivo de protección no sea superior a: 250 V, 20 A.

Attention

Pour ce qui est de la protection contre les courts-circuits (surtension), ce produit dépend de l'installation électrique du local. Vérifiez que le courant nominal du dispositif de protection n'est pas supérieur à :250 V, 20 A.

מוצר זה מסתמך על הגנה המותקנת במבנים למניעת קצר חשמלי. יש לוודא כי המכשיר המגן מפני הקצר החשמלי הוא לא יותר מ-250 V, 20 A

هذا المنتج يعتمد على معدات الحماية من الدوائرالقصيرة التي تم تثبيتها في المبنى
تأكد من أن تقييم الجهاز الوقائي ليس أكثر من: 20A, 250V

경고!

이 제품은 전원의 단락(과전류)방지에 대해서 전적으로 건물의 관련 설비에 의존합니다. 보호장치의 정격이 반드시 250V(볼트), 20A(암페어)를 초과하지 않도록 해야 합니다.

Waarschuwing

Dit product is afhankelijk van de kortsluitbeveiliging (overspanning) van uw electrische installatie. Controleer of het beveiligde aparaat niet groter gedimensioneerd is dan 220V, 20A.

Power Disconnection Warning

Warning!

The system must be disconnected from all sources of power and the power cord removed from the power supply module(s) before accessing the chassis interior to install or remove system components.

電源切断の警告

システムコンポーネントの取り付けまたは取り外しのために、シャーシー内部にアクセスするには、

システムの電源はすべてのソースから切断され、電源コードは電源モジュールから取り外す必要があります。

警告

在你打开机箱并安装或移除内部器件前,必须将系统完全断电,并移除电源线。

警告

在您打開機殼安裝或移除內部元件前，必須將系統完全斷電，並移除電源線。

Warnung

Das System muss von allen Quellen der Energie und vom Netzanschlusskabel getrennt sein, das von den Spg.Versorgungsteilmodulen entfernt wird, bevor es auf den Chassisinnenraum zurückgreift, um Systemsbestandteile anzubringen oder zu entfernen.

¡Advertencia!

El sistema debe ser disconnected de todas las fuentes de energía y del cable eléctrico quitado de los módulos de fuente de alimentación antes de tener acceso el interior del chasis para instalar o para quitar componentes de sistema.

Attention

Le système doit être débranché de toutes les sources de puissance ainsi que de son cordon d'alimentation secteur avant d'accéder à l'intérieur du chassis pour installer ou enlever des composants de systéme.

אזהרה !

יש לנתק את המערכת מכל מקורות החשמל ויש להסיר את כבל החשמלי מהספק לפני גישה לחלק הפנימי של המארז לצורך התקנת או הסרת רכיבים.

يجب فصل النظام من جميع مصادر الطاقة وإزالة سلك الكهرباء من وحدة امداد الطاقة قبل
الوصول إلى المناطق الداخلية للهيكل لتثبيت أو إزالة مكونات الجهاز

경고!

시스템에 부품들을 장착하거나 제거하기 위해서는 섀시 내부에 접근하기 전에 반드시 전원 공급장치로부터 연결되어있는 모든 전원과 전기코드를 분리해주어야 합니다.

Waarschuwing

Voordat u toegang neemt tot het binnenwerk van de behuizing voor het installeren of verwijderen van systeem onderdelen, dient u alle spanningsbronnen en alle stroomkabels aangesloten op de voeding(en) van de behuizing te verwijderen

Equipment Installation

Warning!

Only trained and qualified personnel should be allowed to install, replace, or service this equipment.

機器の設置

トレーニングを受け認定された人だけがこの装置の設置、交換、またはサービスを許可されています。

警告

只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告

只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

Das Installieren, Ersetzen oder Bedienen dieser Ausrüstung sollte nur geschultem, qualifiziertem Personal gestattet werden.

¡Advertencia!

Solamente el personal calificado debe instalar, reemplazar o utilizar este equipo.

Attention

Il est vivement recommandé de confier l'installation, le remplacement et la maintenance de ces équipements à des personnels qualifiés et expérimentés.

אזהרה !

צוות מוסמך בלבד רשאי להתקין, להחליף את הציוד או לתת שירות עבור הציוד.

يجب أن يسمح فقط للموظفين المؤهلين والمدربين لتركيب واستبدال أو خدمة هذا الجهاز

경고!

훈련을 받고 공인된 기술자만이 이 장비의 설치, 교체 또는 서비스를 수행할 수 있습니다.

Waarschuwing

Deze apparatuur mag alleen worden geïnstalleerd, vervangen of hersteld door geschoold en gekwalificeerd personeel.

Restricted Area

Warning!

This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security. (This warning does not apply to workstations).

アクセス制限区域

このユニットは、アクセス制限区域に設置されることを想定しています。

アクセス制限区域は、特別なツール、鍵と錠前、その他のセキュリティの手段を用いてのみ出入りが可能です。

警告

此部件应安装在限制进出的场所，限制进出的场所指只能通过使用特殊工具、锁和钥匙或其它安全手段进出的场所。

警告

此裝置僅限安裝於進出管制區域，進出管制區域係指僅能以特殊工具、鎖頭及鑰匙或其他安全方式才能進入的區域。

Warnung

Diese Einheit ist zur Installation in Bereichen mit beschränktem Zutritt vorgesehen. Der Zutritt zu derartigen Bereichen ist nur mit einem Spezialwerkzeug, Schloss und Schlüssel oder einer sonstigen Sicherheitsvorkehrung möglich.

¡Advertencia!

Esta unidad ha sido diseñada para instalación en áreas de acceso restringido. Sólo puede obtenerse acceso a una de estas áreas mediante la utilización de una herramienta especial, cerradura con llave u otro medio de seguridad.

Attention

Cet appareil doit être installée dans des zones d'accès réservés. L'accès à une zone d'accès réservé n'est possible qu'en utilisant un outil spécial, un mécanisme de verrouillage et une clé, ou tout autre moyen de sécurité.

אזור עם גישה מוגבלת

אזהרה !
יש להתקין את היחידה באזורים שיש בהם הגבלת גישה. הגישה ניתנת בעזרת כלי אבטחה בלבד (מפתח, מנעול וכד׳).

تم تخصيص هذه الوحدة لتركيبها في مناطق محظورة .
يمكن الوصول إلى منطقة محظورة فقط من خلال استخدام أداة خاصة،
قفل ومفتاح أو أي وسيلة أخرى للالأمان

경고!

이 장치는 접근이 제한된 구역에 설치하도록 되어있습니다. 특수도구, 잠금 장치 및 키, 또는 기타 보안 수단을 통해서만 접근 제한 구역에 들어갈 수 있습니다.

Waarschuwing

Dit apparaat is bedoeld voor installatie in gebieden met een beperkte toegang. Toegang tot dergelijke gebieden kunnen alleen verkregen worden door gebruik te maken van speciaal gereedschap, slot en sleutel of andere veiligheidsmaatregelen.

Battery Handling

Warning!

There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions

電池の取り扱い

電池交換が正しく行われなかった場合、破裂の危険性があります。交換する電池はメーカーが推奨する型、または同等のものを使用下さい。使用済電池は製造元の指示に従って処分して下さい。

警告
电池更换不当会有爆炸危险。请只使用同类电池或制造商推荐的功能相当的电池更换原有电池。请按制造商的说明处理废旧电池。

警告
電池更換不當會有爆炸危險。請使用製造商建議之相同或功能相當的電池更換原有電池。請按照製造商的說明指示處理廢棄舊電池。

Warnung

Bei Einsetzen einer falschen Batterie besteht Explosionsgefahr. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

Attention

Danger d'explosion si la pile n'est pas remplacée correctement. Ne la remplacer que par une pile de type semblable ou équivalent, recommandée par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.

¡Advertencia!

Existe peligro de explosión si la batería se reemplaza de manera incorrecta. Reemplazar la batería exclusivamente con el mismo tipo o el equivalente recomendado por el fabricante. Desechar las baterías gastadas según las instrucciones del fabricante.

אזהרה !
קיימת סכנת פיצוץ של הסוללה במידה והוחלפה בדרך לא תקינה. יש להחליף את הסוללה בסוג התואם מחברת יצרן מומלצת.

סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

هناك خطر من انفجار في حالة استبدال البطارية بطريقة غير صحيحة فعليك استبدال البطارية
فقط بنفس النوع أو ما يعادلها كما أوصت به الشركة المصنعة
تخلص من البطاريات المستعملة وفقا لتعليمات الشركة الصانعة

경고!

배터리가 올바르게 교체되지 않으면 폭발의 위험이 있습니다. 기존 배터리와 동일하거나 제조사에서 권장하는 동등한 종류의 배터리로만 교체해야 합니다. 제조사의 안내에 따라 사용된 배터리를 처리하여 주십시오.

Waarschuwing

Er is ontploffingsgevaar indien de batterij verkeerd vervangen wordt. Vervang de batterij slechts met hetzelfde of een equivalent type die door de fabrikant aanbevolen wordt. Gebruikte batterijen dienen overeenkomstig fabrieksvoorschriften afgevoerd te worden.

Redundant Power Supplies

Warning!

This unit might have more than one power supply connection. All connections must be removed to de-energize the unit.

冗長電源装置
このユニットは複数の電源装置が接続されている場合があります。
ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

警告
此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

警告
此裝置連接的電源可能不只一個，必須切斷所有電源才能停止對該裝置的供電。

Warnung

Dieses Gerät kann mehr als eine Stromzufuhr haben. Um sicherzustellen, dass der Einheit kein trom zugeführt wird, müssen alle Verbindungen entfernt werden.

¡Advertencia!

Puede que esta unidad tenga más de una conexión para fuentes de alimentación. Para cortar por completo el suministro de energía, deben desconectarse todas las conexiones.

Attention

Cette unité peut avoir plus d'une connexion d'alimentation. Pour supprimer toute tension et tout courant électrique de l'unité, toutes les connexions d'alimentation doivent être débranchées.

אם קיים יותר מספק אחד

אזהרה !
ליחדה יש יותר מחיבור אחד של ספק. יש להסיר את כל החיבורים על מנת לרוקן את היחידה.

قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة.
يجب إزالة كافة الاتصالات لعزل الوحدة عن الكهرباء

경고!

이 장치에는 한 개 이상의 전원 공급 단자가 연결되어 있을 수 있습니다. 이 장치에 전원을 차단하기 위해서는 모든 연결 단자를 제거해야만 합니다.

Waarschuwing

Deze eenheid kan meer dan één stroomtoevoeraansluiting bevatten. Alle aansluitingen dienen verwijderd te worden om het apparaat stroomloos te maken.

Backplane Voltage

Warning!

Hazardous voltage or energy is present on the backplane when the system is operating. Use caution when servicing.

バックプレーンの電圧
システムの稼働中は危険な電圧または電力が、バックプレーン上にかかっています。
修理する際には注意ください。

警告
当系统正在进行时，背板上有很危险的电压或能量，进行维修时务必小心。

警告
當系統正在進行時，背板上有危險的電壓或能量，進行維修時務必小心。

Warnung

Wenn das System in Betrieb ist, treten auf der Rückwandplatine gefährliche Spannungen oder Energien auf. Vorsicht bei der Wartung.

¡Advertencia!

Cuando el sistema está en funcionamiento, el voltaje del plano trasero es peligroso. Tenga cuidado cuando lo revise.

Attention

Lorsque le système est en fonctionnement, des tensions électriques circulent sur le fond de panier. Prendre des précautions lors de la maintenance.

מתח בפנל האחורי

אזהרה !
קיימת סכנת מתח בפנל האחורי בזמן תפעול המערכת. יש להיזהר במהלך העבודה.

هناك خطر من التيار الكهربائي أوالطاقة الموجودة على اللوحة
عندما يكون النظام يعمل كن حذرا عند خدمة هذا الجهاز

경고!

시스템이 동작 중일 때 후면판 (Backplane)에는 위험한 전압이나 에너지가 발생합니다. 서비스 작업 시 주의하십시오.

Waarschuwing

Een gevaarlijke spanning of energie is aanwezig op de backplane wanneer het systeem in gebruik is. Voorzichtigheid is geboden tijdens het onderhoud.

Comply with Local and National Electrical Codes

Warning!

Installation of the equipment must comply with local and national electrical codes.

地方および国の電気規格に準拠
機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告

设备安装必须符合本地与本国电气法规。

警告

設備安裝必須符合本地與本國電氣法規。

Warnung

Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!

La instalacion del equipo debe cumplir con las normas de electricidad locales y nacionales.

Attention

L'équipement doit être installé conformément aux normes électriques nationales et locales.

תיאום חוקי החשמל הארצי

אזהרה !
התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והארציים.

تركيب المعدات الكهربائية يجب أن يمتثل للقوانين المحلية والوطنية المتعلقة بالكهرباء

경고!

현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing

Bij installatie van de apparatuur moet worden voldaan aan de lokale en nationale elektriciteitsvoorschriften.

Product Disposal

Warning!

Ultimate disposal of this product should be handled according to all national laws and regulations.

製品の廃棄

この製品を廃棄処分する場合、国の関係する全ての法律・条例に従い処理する必要があります。

警告
本产品的废弃处理应根据所有国家的法律和规章进行。

警告
本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

Die Entsorgung dieses Produkts sollte gemäß allen Bestimmungen und Gesetzen des Landes erfolgen.

¡Advertencia!

Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

Attention

La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

סילוק המוצר

אזהרה !
סילוק סופי של מוצר זה חייב להיות בהתאם להנחיות וחוקי המדינה.

عند التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقا لجميع القوانين واللوائح الوطنية

경고!

이 제품은 해당 국가의 관련 법규 및 규정에 따라 폐기되어야 합니다.

Waarschuwing

De uiteindelijke verwijdering van dit product dient te geschieden in overeenstemming met alle nationale wetten en reglementen.

Hot Swap Fan Warning

Warning!

The fans might still be turning when you remove the fan assembly from the chassis. Keep fingers, screwdrivers, and other objects away from the openings in the fan assembly's housing.

ファン・ホットスワップの警告

シャーシから冷却ファン装置を取り外した際、ファンがまだ回転している可能性があります。ファンの開口部に、指、ドライバー、およびその他のものを近づけないで下さい。

警告
当您从机架移除风扇装置，风扇可能仍在转动。小心不要将手指、螺丝起子和其他物品太靠近风扇

警告
當您從機架移除風扇裝置，風扇可能仍在轉動。小心不要將手指、螺絲起子和其他物品太靠近風扇。

Warnung

Die Lüfter drehen sich u. U. noch, wenn die Lüfterbaugruppe aus dem Chassis genommen wird. Halten Sie Finger, Schraubendreher und andere Gegenstände von den Öffnungen des Lüftergehäuses entfernt.

¡Advertencia!

Los ventiladores podran dar vuelta cuando usted quite ell montaje del ventilador del chasis. Mandtenga los dedos, los destornilladores y todos los objetos lejos de las aberturas del ventilador

Attention

Il est possible que les ventilateurs soient toujours en rotation lorsque vous retirerez le bloc ventilateur du châssis. Prenez garde à ce que doigts, tournevis et autres objets soient éloignés du logement du bloc ventilateur.

אזהרה !
כאשר מסירים את חלקי המאוורר מהמארז, יתכן והמאוררים עדיין עובדים. יש להרחיק למרחק בטוח את האצבעות וכלי עבודה שונים מהפתחים בתוך המאוורר

من الممكن أن المراوح لا تزال تدور عند إزالة كتلة المروحة من الهيكل يجب إبقاء الأصابع ومفكات البراغي
وغيرها من الأشياء بعيدا عن الفتحات في كتلة المروحة.

경고!

섀시로부터 팬 조립품을 제거할 때 팬은 여전히 회전하고 있을 수 있습니다. 팬 조림품 외관의 열려있는 부분들로부터 손가락 및 스크류드라이버, 다른 물체들이 가까이 하지 않도록 배치해 주십시오.

Waarschuwing

Het is mogelijk dat de ventilator nog draait tijdens het verwijderen van het ventilatorsamenstel uit het chassis. Houd uw vingers, schroevendraaiers en eventuele andere voorwerpen uit de buurt van de openingen in de ventilatorbehuizing.

Power Cable and AC Adapter

Warning!

When installing the product, use the provided or designated connection cables, power cables and AC adaptors. Using any other cables and adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL or CSA -certified cables (that have UL/CSA shown on the code) for any other electrical devices than products designated by Supermicro only.

電源コードとACアダプター

製品を設置する場合、提供または指定された接続ケーブル、電源コードとACアダプターを使用下さい。他のケーブルやアダプタを使用すると故障や火災の原因になることがあります。電気用品安全法は、ULまたはCSA認定のケーブル(UL/CSEマークがコードに表記)を Supermicroが指定する製品以外に使用することを禁止しています。

警告

安装此产品时,请使用本身提供的或指定的连接线,电源线和电源适配器.使用其它线材或适配器可能会引起故障或火灾。除了Supermicro所指定的产品,电气用品和材料安全法律规定禁止使用未经UL或CSA认证的线材。(线材上会显示UL/CSA符号)。

警告

安裝此產品時,請使用本身提供的或指定的連接線,電源線和電源適配器.使用其它線材或適配器可能會引起故障或火災。除了Supermicro所指定的產品,電氣用品和材料安全法律規定禁止使用未經UL或CSA認證的線材。(線材上會顯示UL/CSA符號)。

Warnung

Bei der Installation des Produkts, die zur Verfügung gestellten oder benannt Anschlusskabel, Stromkabel und Netzteile. Verwendung anderer Kabel und Adapter kann zu einer Fehlfunktion oder ein Brand entstehen. Elektrische Geräte und Material Safety Law verbietet die Verwendung von UL-oder CSA-zertifizierte Kabel, UL oder CSA auf der Code für alle anderen elektrischen Geräte als Produkte von Supermicro nur bezeichnet gezeigt haben.

¡Advertencia!

Al instalar el producto, utilice los cables de conexión previstos o designados, los cables y adaptadores de CA. La utilización de otros cables y adaptadores podría ocasionar un mal funcionamiento o un incendio. Aparatos Eléctricos y la Ley de Seguridad del Material prohíbe el uso de UL o CSA cables certificados que tienen UL o CSA se muestra en el código de otros dispositivos eléctricos que los productos designados por Supermicro solamente.

Attention

Lors de l'installation du produit, utilisez les bables de connection fournis ou désigné. L'utilisation d'autres cables et adaptateurs peut provoquer un dysfonctionnement ou un incendie. Appareils électroménagers et de loi sur la sécurité Matériel interdit l'utilisation de UL ou CSA câbles certifiés qui ont UL ou CSA indiqué sur le code pour tous les autres appareils électriques que les produits désignés par Supermicro seulement.

חשמליים ומתאמי AC

אזהרה !

כאשר מתקינים את המוצר, יש להשתמש בכבלים, ספקים ומתאמים AC אשר נועדו וסופקו לשם כך. שימוש בכל כבל או מתאם אחר יכול לגרום לתקלה או קצר חשמלי. על פי חוקי שימוש במכשירי חשמל וחוקי בטיחות, קיים איסור להשתמש בכבלים המוסמכים ב- UL או ב- CSA (כשאר מופיע עליהם קוד של UL/CSA) עבור כל מוצר חשמלי אחר שלא צוין על ידי סופרמיקרו בלבד.

عند تركيب الجهاز يجب استخدام كابلات التوصيل،والكابلات الكهربائية ومحولات التيار المتردد
التي . أن استخدام أي كابلات ومحولات أخرى يتسبب في حدوث عطل أو حريق.
تم توفيرها لك مع المنتج
الأجهزة الكهربائية ومواد قانون السلامة يحظر استخدام الكابلات CSA أو UL معتمدة من قبل
لأي أجهزة كهربائية أخرى غير المنتجات المعينة من قبل Supermicro
(التي تحمل علامة UL/CSA)

경고!

제품을 설치할 때에는 제공되거나 지정된 연결케이블과 전원케이블, AC어댑터를 사용해야 합니다. 그 밖의 다른 케이블들이나 어댑터들은 고장 또는 화재의 원인이 될 수 있습니다. 전기용품안전법 (Electrical Appliance and Material Safety Law)은 슈퍼마이크로에서 지정한 제품들 외에는 그 밖의 다른 전기 장치들을 위한 UL또는 CSA에서 인증한 케이블(전선 위에 UL/CSA가 표시)들의 사용을 금지합니다.

Waarschuwing

Bij het installeren van het product, gebruik de meegeleverde of aangewezen kabels, stroomkabels en adapters. Het gebruik van andere kabels en adapters kan leiden tot een storing of een brand. Elektrisch apparaat en veiligheidsinformatiebladen wet verbiedt het gebruik van UL of CSA gecertificeerde kabels die UL of CSA die op de code voor andere elektrische apparaten dan de producten die door Supermicro alleen.

Notes

Chapter 3

Chassis Components

This chapter describes common components included with your chassis. Installation and replacement procedures are detailed in subsequent chapters.

3-1 Components

For the latest shipping lists, visit our Web site at: http://www.supermicro.com.

Drives

The chassis features five bays for SAS or SATA drives. The hard disk drives can be configured to be hot swappable.

Three 5.25" drive bays provide for peripheral DVD drives, CD drives, floppy drives, or additional hard disk drives.

Power Supply

The chassis includes two redundant 1400W or 1200W high-efficiency power supplies, each with a low noise thermal control fan, rated at 200 Watts. The power supply modules are served by a power distributor.

Motherboards

It supports Intel and AMD quad processors on motherboards of size up to

- 16.48" x 14.3" E-ATX (Quad-processor motherboards)
- 16.4" x 16.79" (for X8 motherboards)

Fans

The chassis accepts three system fans and three rear exhaust fans. System fans are hot-swappable and powered from the serverboard. These fans are 4U high and are powered by 3-pin connectors.

I/O Expansion slots

The chassis offers seven full-height, full-length expansion slots.

Control Panel

The control panel features a power switch, reset button, six LED indicators and two front USB ports.

3-2 Optional Components

Air Shroud

Air shrouds are availble to increase cooling efficiency. Select one to match your motherboard.

Mobile Rack

The SC748 chassis includes either a M35TQ or M35S mobile rack. For detailed specific to your mobile rack, information, see the appendix at the back of this manual.

Mounting Rails

The SC748 can be mounted in a rack.

3-3 Where to get Replacement Components

Though not frequently, you may need replacement parts for your system. To ensure the highest level of professional service and technical support, we strongly recommend purchasing exclusively from our Supermicro Authorized Distributors/System Integrators/Resellers. A list can be found at: http://www.supermicro.com. Click the **Where to Buy** link.

Chapter 4

System Interface

4-1 Overview

The user interface elements on the chassis are:

- A control panel on the front that includes power buttons and status monitoring lights
- Status lights on externally accessable hard drives
- Status lights for the power supply visible from the back of the chassis

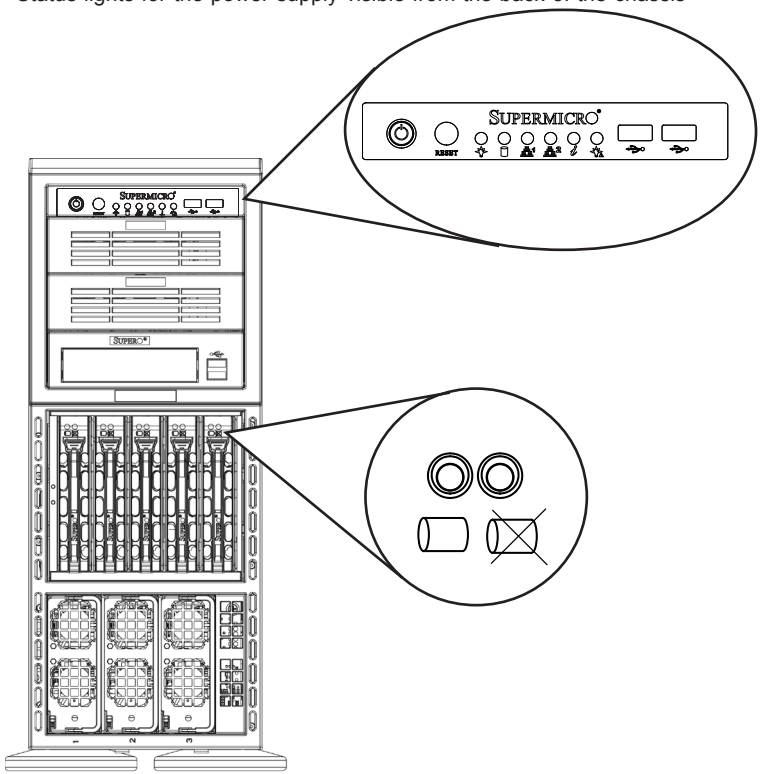
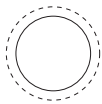


Figure 4-1. Front LEDs

4-2 Control Panel Buttons

The chassis includes two push-buttons that control power to the system.

Power: The main power switch is used to apply or remove power from the power supply to the server system. Turning off system power with this button removes the main power but keeps standby power supplied to the system. Therefore, you must unplug system before servicing.



Reset: The reset button is used to reboot the system.

4-3 Control Panel LEDs

There are six LEDs that provide status information about the system.

Power: Indicates power is being supplied to the system power supply units. This LED should normally be illuminated when the system is operating.

HDD: Indicates hard disk drive activity when flashing.

NIC1: Indicates network activity on GLAN1 when flashing.

NIC2: Indicates network activity on GLAN2 when flashing.

Information LED: Alerts operator of several states, as noted in the table below.

Information LED	
Status	**Description**
Continuously on and red	An overheat condition has occured. (This may be caused by cable congestion.)
Blinking red (1Hz)	Fan failure, check for an inoperative fan.
Blinking red (0.25Hz)	Power failure, check for a non-operational power supply.
Solid blue	Local UID has been activated. Use this function to locate the server in a rack mount environment.
Blinking blue	Remote UID is on. Use this function to identify the server from a remote location.

Power Fail: Indicates a power failure to the system's power supply units.

Overheating

There are several possible responses if the system overheats.

Overheat Temperature Setting

Some backplanes allow the overheat temperature to be set at 45, 50, or 55 by changing a jumper setting. For more information, consult the backplane user manual at www.supermicro.com. (Click Support, then the Manuals link.)

Responses

If the server overheats:

1. Use the LEDs to determine the nature of the overheating condition.
2. Confirm that the chassis covers are installed properly.
3. Check the routing of the cables and make sure all fans are present and operating normally.
4. Verify that the heatsinks are installed properly.

4-4 Drive Carrier LEDs

The chassis includes externally accessable SAS/SATA drives. Each drive carrier displays two status LEDs on the front of the carrier.

- **Green**: When illuminated, this LED indicates drive activity. It blinks on and off when that particular drive is being accessed This function is controlled by the backplane.
- **Red**: When illuminated, this LED indicates a drive failure. You should be notified by your system management software.

4-5 Power Supply LEDs

On the rear of the power supply module, an LED displays the status.

- **Solid Green**: When illuminated, indicates that the power supply is on.
- **Solid Amber**: When illuminated, indicates the power supply is plugged in and turned off, or the system is off but in an abnormal state.
- **Blinking Amber**: When blinking, this system power supply temperature has reached 63C. The system will automatically power-down when the power supply temperature reaches 70C and restarts when the power supply temperature goes below 60C.

Chapter 5

Chassis Setup and Maintenance

5-1 Overview

This chapter covers the steps required to install components and perform maintenance on the chassis. The only tool you will need to install components and perform maintenance is a Phillips screwdriver.

Review the warnings and precautions listed in the manual before setting up or servicing this chassis. These include information in Chapter 2 and the warning/precautions listed in the setup instructions.

5-2 Removing Power from the System

Before performing most setup or maintenance tasks, use the following procedure to ensure that power has been removed from the system.

1. Use the operating system to power down the system, following the on-screen prompts.
2. After the system has completely shut-down, carefully grasp the head of the power cord and gently pull it out of the back of the power supply. If your system has dual power supplies, remove the cords from both power supplies.
3. Disconnect the cord from the power strip or wall outlet.

5-3 Removing the Chassis Cover

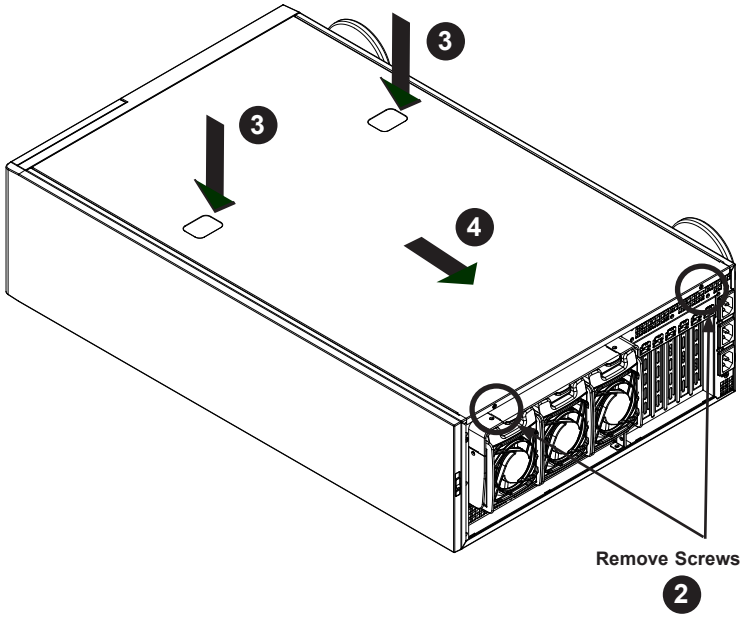


Figure 5-1. Removing the Chassis Cover

Removing the Chassis Cover

1. Remove the two screws securing the cover to the chassis.
2. Press the release tabs simultaneously.
3. Slide the cover forward.

5-4 Control Panel

The front control panel LEDs help monitor the system status. See Chapter 4 for details on the LEDs and buttons.

Control Panel Orientation

The server can be configured for either tower or server rack orientation. It is shipped in tower mode and can be immediately used as desktop server. To use it in a rack, rotate the module that contains the control panel and the three drive trays (#1 in Figure 5-2) 90 degrees.

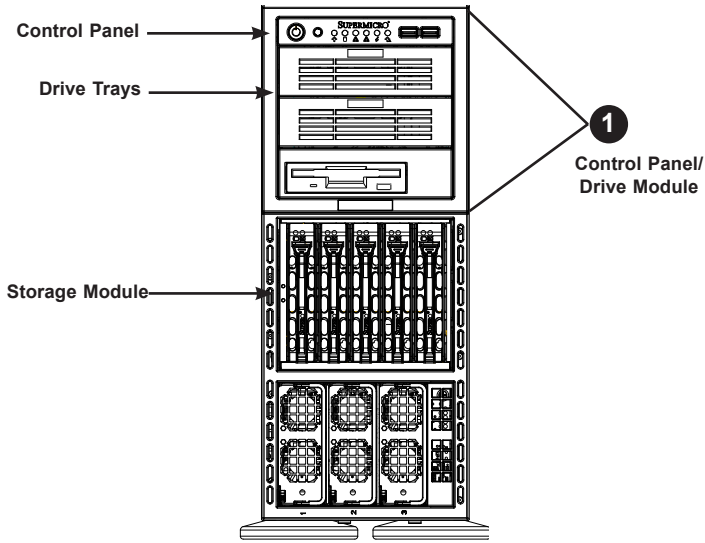


Figure 5-2. Chassis in Tower Mode (Default Configuration)

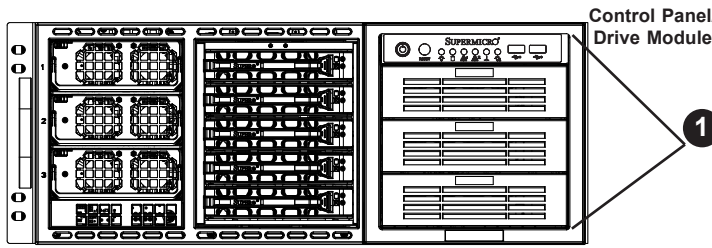


Figure 5-3. Chassis in Rack Mount Mode

Rotating the Control Panel/Drive Module for Rack Mounting

1. Open the chassis cover.
2. Locate the control panel/drive module and disconnect any cables from the module to any component in the chassis.
3. Push the module release lever to unlock the module. (Figure 5-4)
4. Grasp the external edges of the module and pull the unit from the chassis.
5. Rotate the module 90 degrees so that the control panel is on top.
6. Reinsert the module into the chassis and reconnect the cables.

Caution: Use caution when working around the backplane. Do not touch the backplane with any metal objects and make sure no ribbon cables touch the backplane or obstruct the holes, which aid in proper airflow.

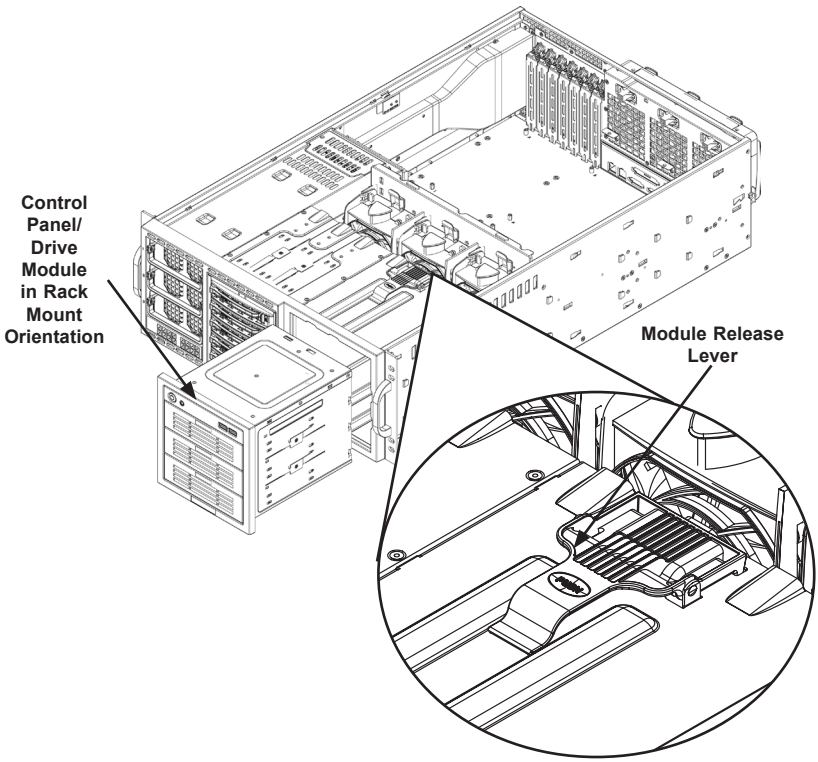


Figure 5-4. Rotating the Control Panel/Drive Module

5-5 Configuring Drives

The default configuration includes three full size drive trays for removable media drives or hard disk drives, and one storage module with five hard disk drives.

Configuring the 5.25" Drive Bays

The control panel/drive module includes three 5.25" drive bays under the front control panel. It can be set up in a variety of configurations to suit the user's needs.

- Three peripheral drives, such as CD, DVD, or floppy
- Additional fixed hard drives in an individual bay
- A combination of the above
- A mobile rack with five additional 3.5" hot-swappable hard drives

Installing a Hard Drive into a Drive Tray

1. Open the chassis cover.
2. Locate the drive tray and pull the tray release tab for the slot.
3. Push the drive tray toward the front of the chassis (Figure 5-5).

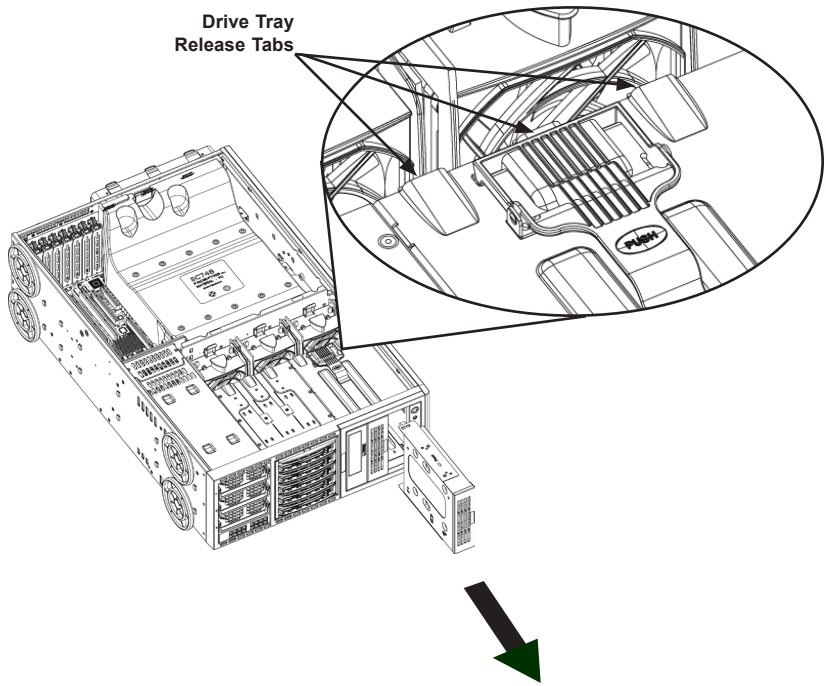


Figure 5-5. Remove Drive Tray

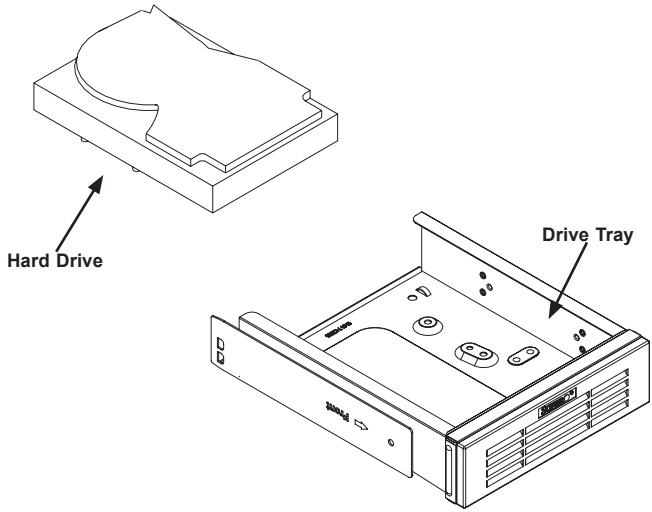


Figure 5-6. Add a Hard Drive to the Drive Tray

4. Place the hard drive in the drive tray. The hard drive may not completely fill the tray (Figure 5-6).
5. Secure the hard drive to the tray with four screws from the bottom.
6. Slide the drive tray into the chassis until the tray clicks into place.

Note: Enterprise level hard disk drives are recommended for use in Supermicro chassis and servers. For information on recommended HDDs, visit the Supermicro Web site at http://www.supermicro.com/products/nfo/files/storage/SAS-CompList.pdf

Caution: When the server is operating, all the drive trays should remain in the drive bays to maintain proper cooling airflow.

Adding Peripheral Drives to the Drive Bays

Replace a drive tray with a peripheral drive.

1. Open the chassis cover.
2. Locate the release tab for the drive tray where you want to place the peripheral drive (Figure 5-5).
3. Push the drive tray toward the front of the chassis.

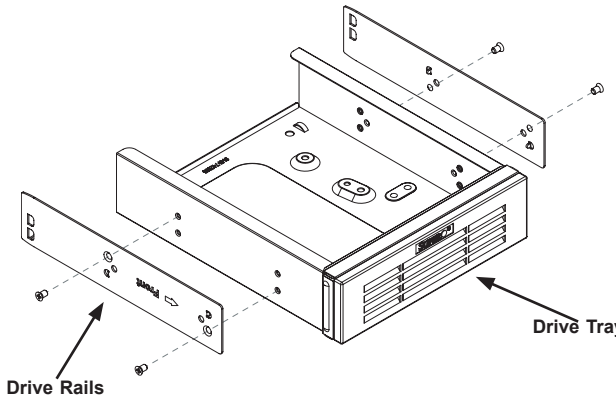


Figure 5-7. Removing Rails from the Drive Tray

4. Remove the rails from the drive tray by removing two screws from each side. (Figure 5-7)
5. Attach the rails to a DVD drive, CD drive, floppy drive, or other peripheral. The rails should fit any standard sized peripheral.
6. Slide the drive into the chassis until it clicks into place.

Additional Hard Drives

The SC748 chassis accepts a CSE-M35BP Supermicro mobile rack in place of the three bays just under the control panel. This configuration yields a total of ten hot-swap hard drives and no peripheral drives.

Installing the M35 Mobile Rack

1. Open the chassis cover.
2. Press the drive tray release tabs (Figure 5-5).
3. Push all three drive trays forward and out of the chassis
4. Remove the six drive tray rails (Figure 5-7).

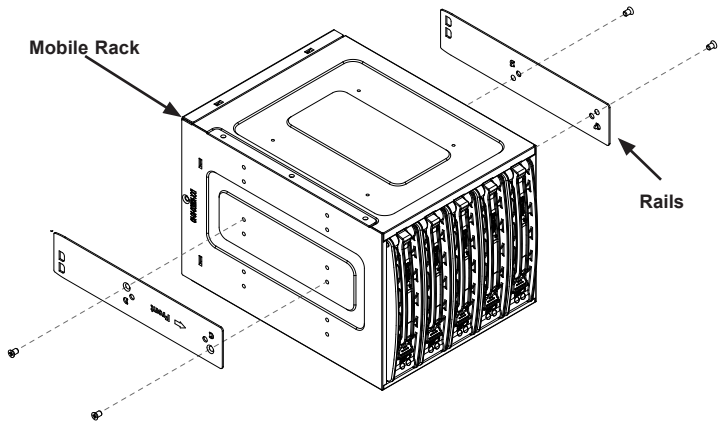


Figure 5-8. Add Rails to the Mobile Rack
(Two shown as an example; install six.)

5. Install all six rails onto the mobile rack. Each rail requires two screws. Make sure the arrow on the rail points toward the front of the chassis (Figure 5-8).
6. Slide the mobile rack into the chassis.

Installing Drives in the Storage Module

Hard drives in the storage module and mobile rack are mounted in drive carriers to simplify their installation and removal. These carriers also help promote proper airflow for the drive bays.

Installing Hard Drives

1. Press the release button to extend the drive tray handle.
2. Using the handle, pull the drive tray out by the handle. The drive is hot-swappable; there are no cables to disconnect (Figure 5-9). Remove the screws holding the drive tray to the dummy drive.

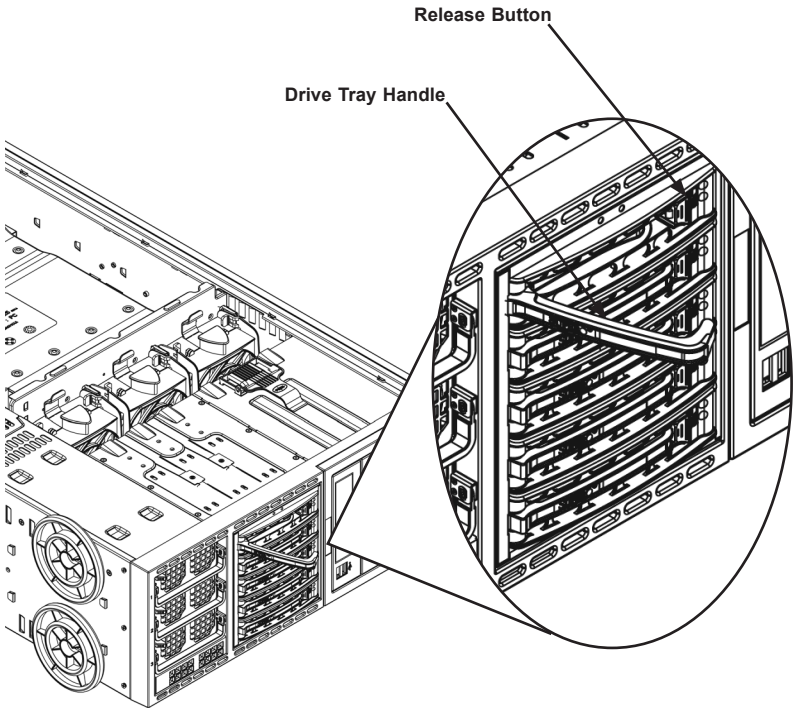


Figure 5-9. Install Hard Drives

3. Place a hard drive in the drive tray (Figure 5-10).

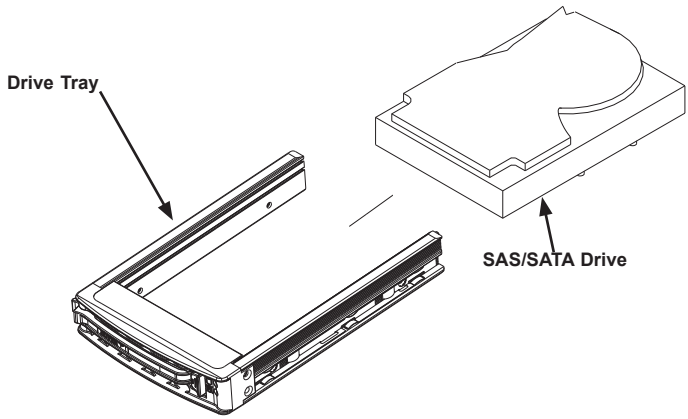


Figure 5-10. Installing the Hard Drive

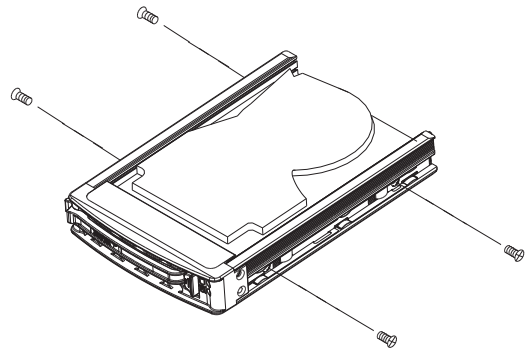


Figure 5-11. Securing Drive

4. Secure the hard drive to the tray using four screws (Figure 5-11).
5. Insert the hard drive into the chassis. To do this:

   a. Press the hard drive release button to extend the drive tray handle.

   b. Insert the drive tray assembly into the chassis and close the handle to lock the drive tray into place.

5-6 Installing the Motherboard

I/O Shield

The I/O shield holds the motherboard ports in place. Install the I/O shield before you install the motherboard.

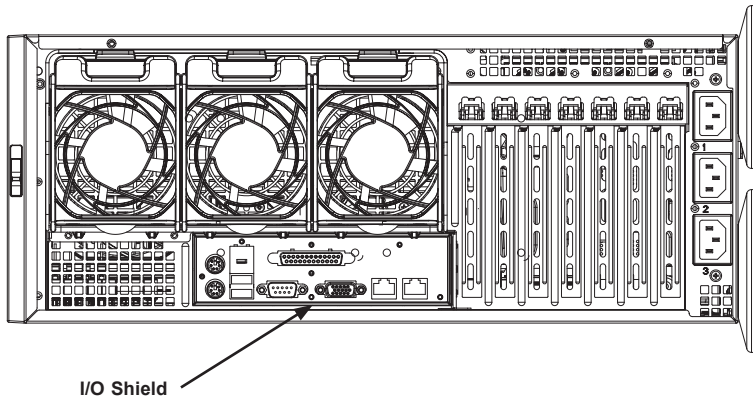


Figure 5-12. I/O Shield

Installing the I/O Shield

1. Review the documentation that came with your motherboard. Become familiar with component placement, requirements, and precautions.
2. Open the chassis cover.
3. Choose the proper I/O shield for the motherboard you are installing.
4. With the illustrations facing the outside of the chassis, place the shield into the space provided. Once installed, the motherboard ports will hold the I/O shield in place.

Permanent and Optional Standoffs

Standoffs prevent short circuits by securing space between the motherboard and the chassis surface. The SC748 chassis packaging includes optional standoffs (hexagon shaped posts). These standoffs accept the rounded Phillips head screws included in the SC748 accessories packaging.

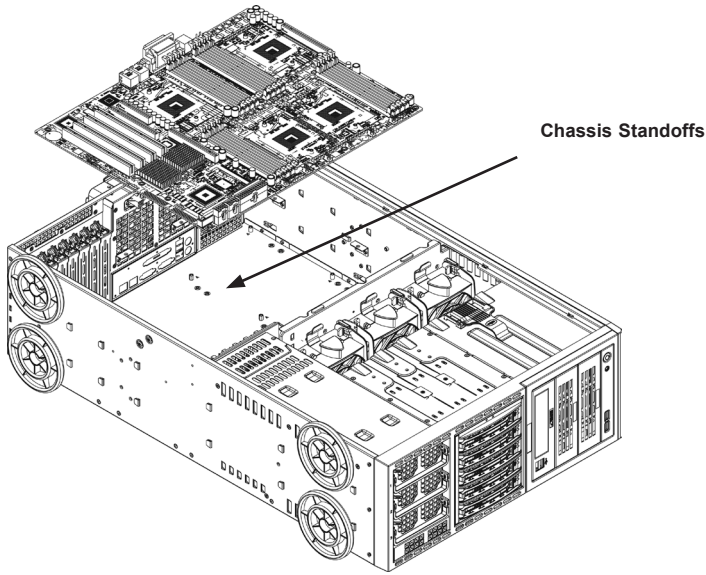


Figure 5-13. Chassis Standoffs

Procedure for Motherboard Installation

Installing the Motherboard:

1. Review the documentation that came with your motherboard. Become familiar with component placement, requirements, and precautions.
2. Disconnect the power supply and lay the chassis on a flat surface.
3. Open the chassis cover.
4. As required by your motherboard, install standoffs in any areas that do not have a permanent standoff. To do this:
   a. Place a hexagonal standoff screw through the bottom the chassis.
   b. Secure the screw with the hexagon nut (rounded side up).
5. Lay the motherboard on the chassis aligning the permanent and optional standoffs.
6. Secure the motherboard to the chassis using the rounded, Phillips head screws.
7. Secure the CPUs, heatsinks, and other components to the motherboard, chassis, and/or backplane as needed.

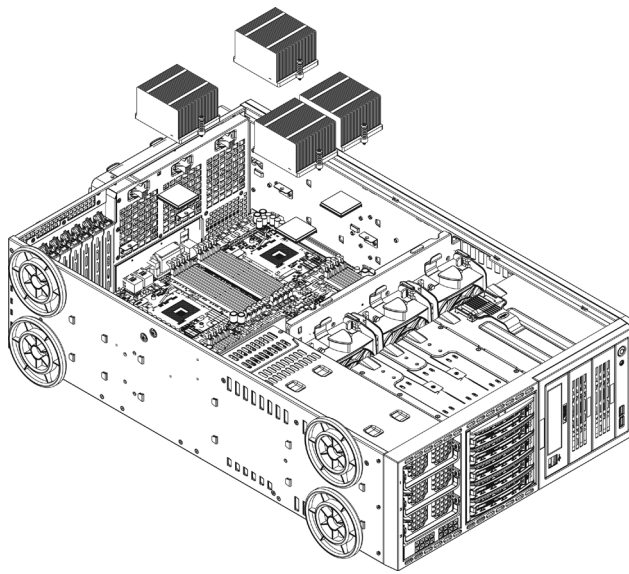


Figure 5-14. Installing Heatsinks

Power Supply Connections

Connect each of the following cables, as required, by your motherboard manufacturer. In some instances, some cables may not need to be connected. Some cables may not be available with your model.

Power Supply Cable			
Name	**Quantity**	**Connects to:**	**Description**
20-pin or 24-pin power cable	1	Motherboard	20-pin or 24-pin power cable provides electricity to the motherboard. Has 20 - 24 yellow, black, gray, red, orange, green and blue wires.
Hard drive power cable	2	Backplane	Each cable has 3 connectors (two hard drive and one floppy drive). Attach the hard drive connectors to the backplane. **If you are using a Supermicro backplane, the floppy drive connector does not need to be attached.**
8-pin motherboard cable	1	Motherboard	Provides power to the motherboard CPU. This cable has 2 black and 2 yellow wires.
4-pin motherboard cable	1	Motherboard	Provides power to PCI expansion card. This cable has 2 black and 2 yellow wires.
5-pin SMBus power cable (small)	1	Motherboard	Allows the SM (System Management) bus to monitor power supply
2-pin INT cable	1	Motherboard	Intrusion detection cable allows the system to log when the server chassis has been opened.

5-7 Expansion Card Setup

After motherboard installation, install expansion cards to the chassis, such as PCI cards.

Installing Expansion Cards

1. Locate the release tab on the top of the PCI bracket.
2. Gently apply pressure in the middle of the release tab to unlock the PCI Slot bracket.
3. Pull the release tab upward.

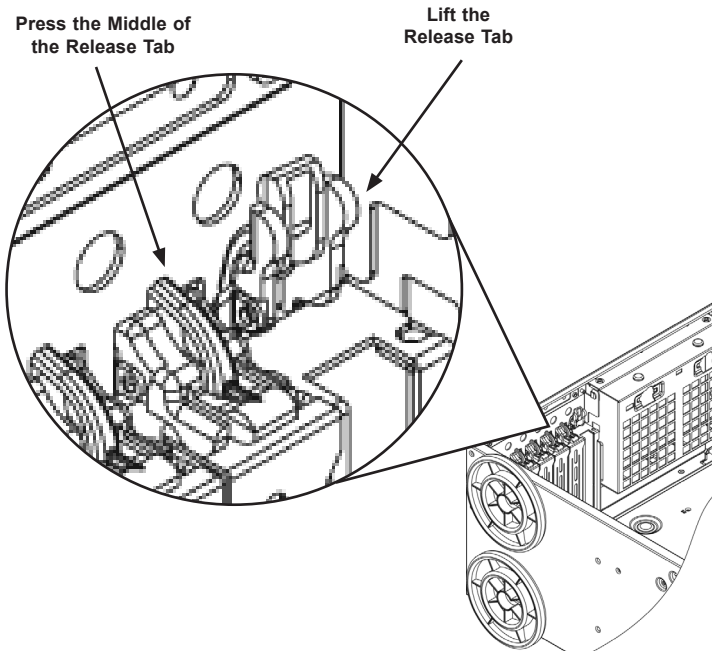


Figure 5-15. Expansion Card Port

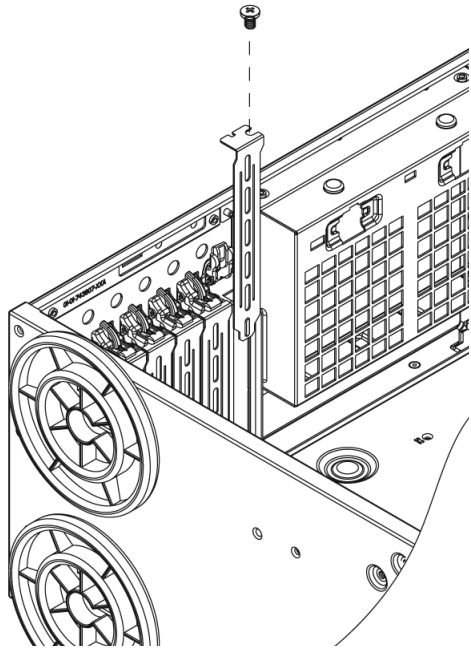


Figure 5-16. Remove PCI Card Slot Guard

4. Remove the screw holding the bracket in place and pull the bracket from the chassis.
5. Install your expansion card into the PCI slot bracket and motherboard. To do this, slide the expansion card (with "L" bracket) into the PCI slot and secure the card to the motherboard.
6. Push the PCI bracket release tab down until it locks into place with an audible click.
7. Secure the expansion card with the screw previously removed from the chassis
8. Repeat this process with each expansion card you want to install into the chassis.

5-8 Installing the Air Shroud

Air shrouds concentrate airflow to maximize fan efficiency. The SC748 chassis supports two different air shroud designs, one for AMD CPUs and, and another for Intel CPUs.

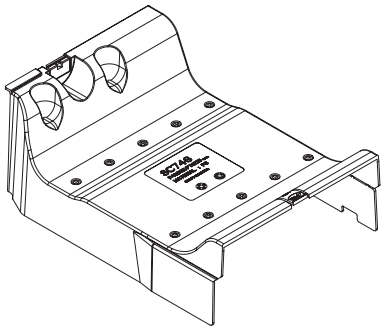


Figure 5-17a. Intel CPU Air Shroud

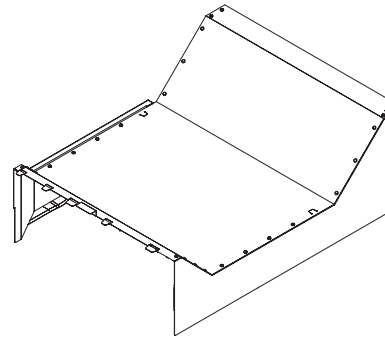


Figure 5-17b. AMD CPU Air Shroud

AMD CPU Users - The air shroud for use with AMD CPUs includes tabs that can be removed if motherboard components prevent the air shroud from fitting securely. Remove tabs only if necessary.

Intel CPU Users - The air shroud for use with Intel CPUs does not require any additional modification.

Installing the Air Shroud

1. Remove the chassis cover.
2. Place air shroud in your chassis with the fan side touching the edge of the two fans closest to the power supply. The other side should cover both of the rear fans. They do not require screws to install.
3. Replace the chassis cover.

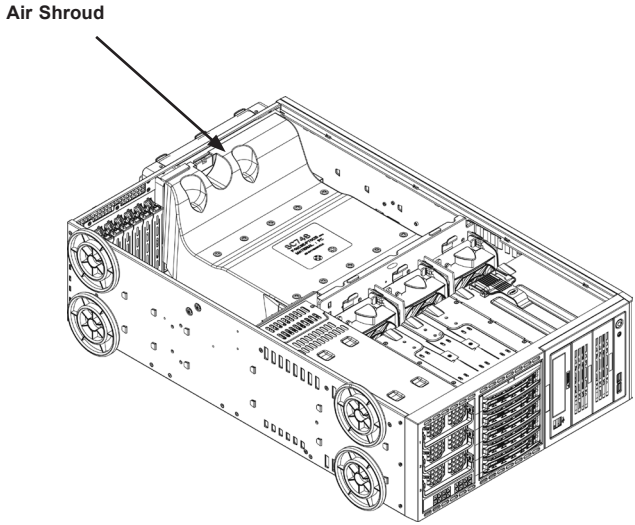


Figure 5-18. Air Shroud in Place

Checking the Server Air Flow

Check the Following

- Make sure there are no objects obstructing the airflow in and out of the server. In addition, if you are using a front bezel, make sure the bezel's filter is replaced periodically.
- Do not operate the server without drives or drive trays in the drive bays. Use only recommended server parts.
- Make sure no wires or foreign objects obstruct air flow through the chassis. Pull all excess cabling out of the airflow path or use shorter cables.

Installation Complete

In most cases, the chassis power supply and fans are pre-installed. If you need to install them, continue through this chapter. Rack installation instructions are detailed in the following chapter.

5-9 System Fans

Six heavy duty fans provide cooling for the chassis. Three fans are located in the front of the motherboard and three fans are in the rear of the chassis. The fans are pre-installed in the chassis. Each fan is hot-swappable and can be replaced without removing any connections.

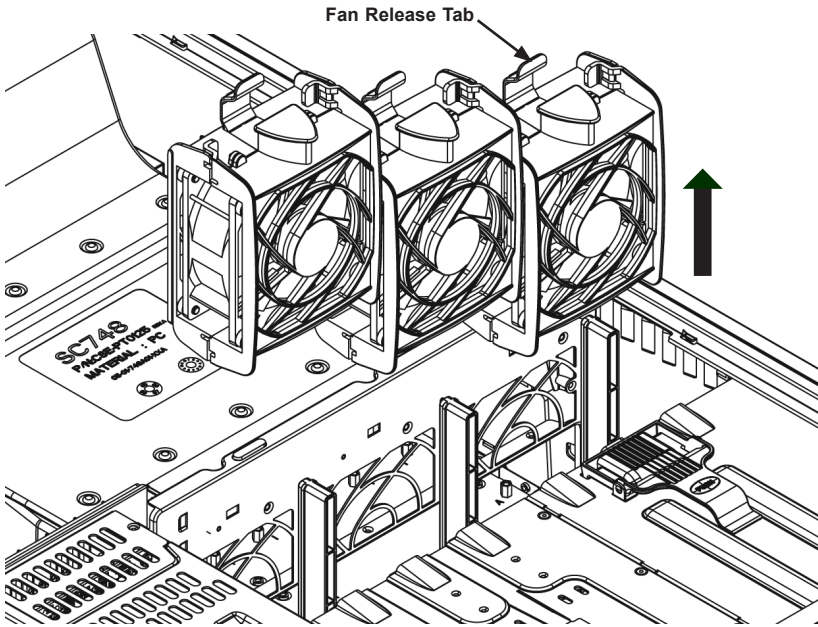


Figure 5-19. Front Chassis Fans

Replacing a Front Chassis Fan

Front Fan Replacement Procedure

1. Open the chassis cover and determine which fan has failed. Because the fans are hot-swappable, the chassis does not have to be powered down.
2. Press the fan release tab and lift the failed fan from the chassis. Front fans must be pulled straight up.
3. Place the new fan into the vacant space in the housing while making sure the arrows on the top of the fan (indicating air direction) point in the same direction as the arrows on the other fans. As soon as the fan is connected, it will begin working.

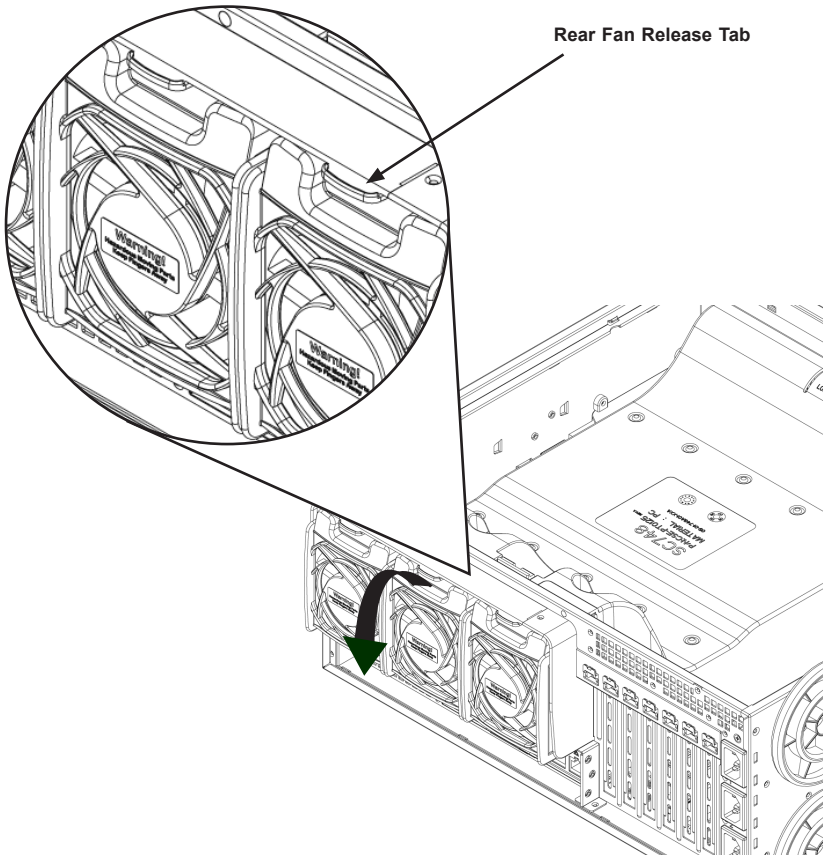


Figure 5-20. Rear Chassis Fans

Replacing a Rear Chassis Fan

Rear Fan Replacement Procedure

1. Press the rear fan release tab.
2. Remove the fan from the chassis by pulling the top of the fan toward the rear of the chassis.
3. Place the new fan in the chassis bottom first.
4. Push the fan fully into the housing until the fan clicks into place.

5-10 Power Supply

This chassis features an auto-switching power supply. This enables it to automatically sense and operate at a 100v to 240v input voltage. An amber light will be illuminated when the power is off. An green light indicates that the power supply is operating.

Power Supply Failure

In redundant power supply models, the system automatically switches to the second power supply when the first fails.

Replacing the Power Supply

1. The power cords attach in the rear of the chassis. Remove the cord that corresponds to the module to be replaced.
2. On the front of the chassis, push the release button on the power supply module. (Figure 5-21)
3. Pull the power supply out using the handle provided.
4. Replace the failed power module with the same model. Push the new module into the power bay until you hear a click.
5. Replace the AC power cord.

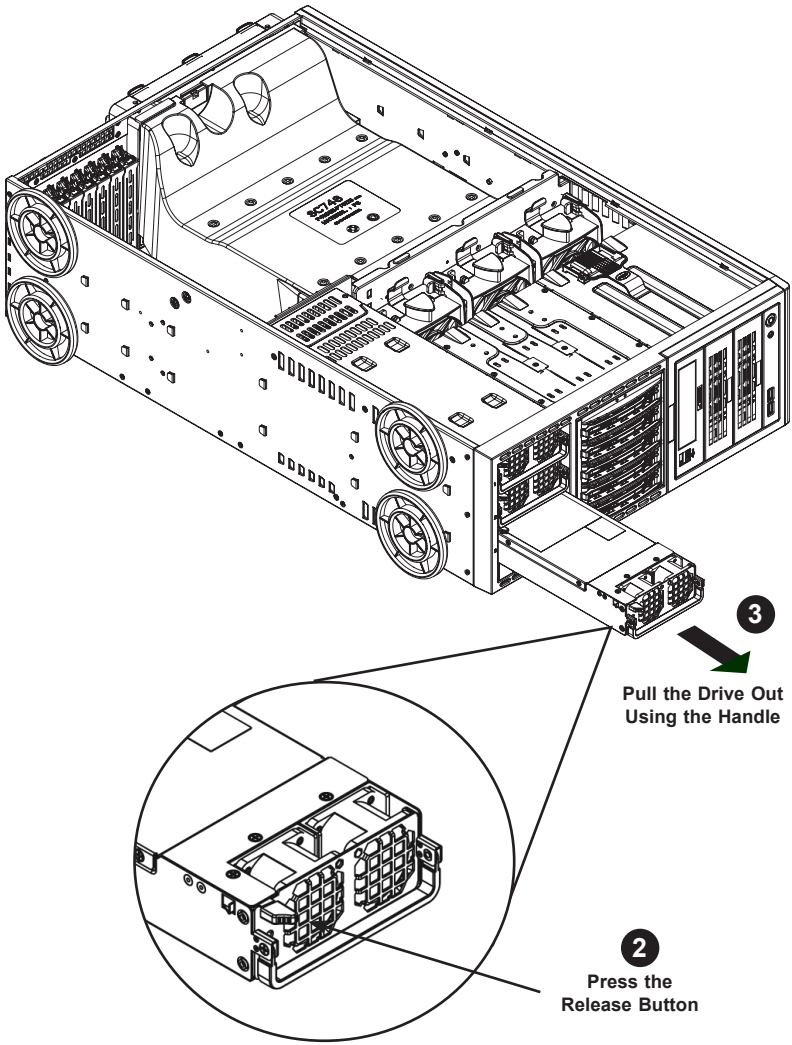


Figure 5-21. Removing a Power Supply

Chapter 6

Rack Installation

This chapter provides instructions for installing the chassis into a rack.

6-1 Unpacking the System

You should inspect the box the chassis was shipped in, and note if it was damaged in any way. If the chassis itself shows damage, you should file a damage claim with the carrier who delivered it.

Mounting rails are an option for the SC748 chassis. Be sure you have ordered and received the correct type.

6-2 Preparing for Setup

Decide on a suitable location for the rack unit that will hold your chassis. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated. Place it near a grounded power outlet.

Choosing a Setup Location

- Leave enough clearance in front of the rack to enable you to open the front door completely (~25 inches).
- Leave approximately 30 inches of clearance in the back of the rack to allow for sufficient airflow and ease in servicing.
- This product is for installation only in a Restricted Access Location (dedicated equipment rooms, service closets and similar environments).

Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting on them.
- In single rack installation, stabilizers should be attached to the rack.
- In multiple rack installations, the racks should be coupled together.
- Always make sure the rack is stable before extending a component from the rack.
- You should extend only one component at a time--extending two or more simultaneously may cause the rack to become unstable.
- When initially installing the server to a rack, test that the rail locking tabs engage to prevent the server from being overextended. Have a rack lift in place as a precaution in case the test fails.
- In any instance of pulling the system from the rack, always use a rack lift and follow all associated safety precautions.

General Server Precautions

- Review the electrical and general safety precautions that came with the components you are adding to your chassis.
- Determine the placement of each component in the rack *before* you install the rails.
- Install the heaviest server components on the bottom of the rack first, and then work up.
- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges, voltage spikes and to keep your system operating in case of a power failure.
- Allow the hot plug hard drives and power supply modules to cool before touching them.
- Always keep the rack's front door and all panels and components on the servers closed when not servicing to maintain proper cooling.

6-3 Rack Mounting Considerations

Ambient Operating Temperature

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the ambient temperature of the room. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (TMRA).

Reduced Airflow

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

Mechanical Loading

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

Circuit Overloading

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Ground

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (for example, the use of power strips, and other devices).

Warning: To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

6-4 Procedure for Rack Mounting

There are a variety of rack units on the market, which may mean the assembly procedure differs slightly. You should also refer to the installation instructions for the rack unit you are using.

By default, the chassis is shipped configured as a tower. The tower top cover and bottom feet must be removed to mount in a rack. Also, the control panel/drive module should be rotated 90 degrees. See Chapter 4 for this procedure.

Removing the Tower Cover and Feet

The SC748 chassis is shipped with the chassis cover and feet installed. Both must be removed for before installing the rails.

Removing the Tower Top Cover

1. Locate the chassis cover lock (blue lever) at the rear of the chassis cover.
2. Slide the chassis cover lock to the right and push chassis cover forward.
3. Lift the chassis top cover off the chassis.

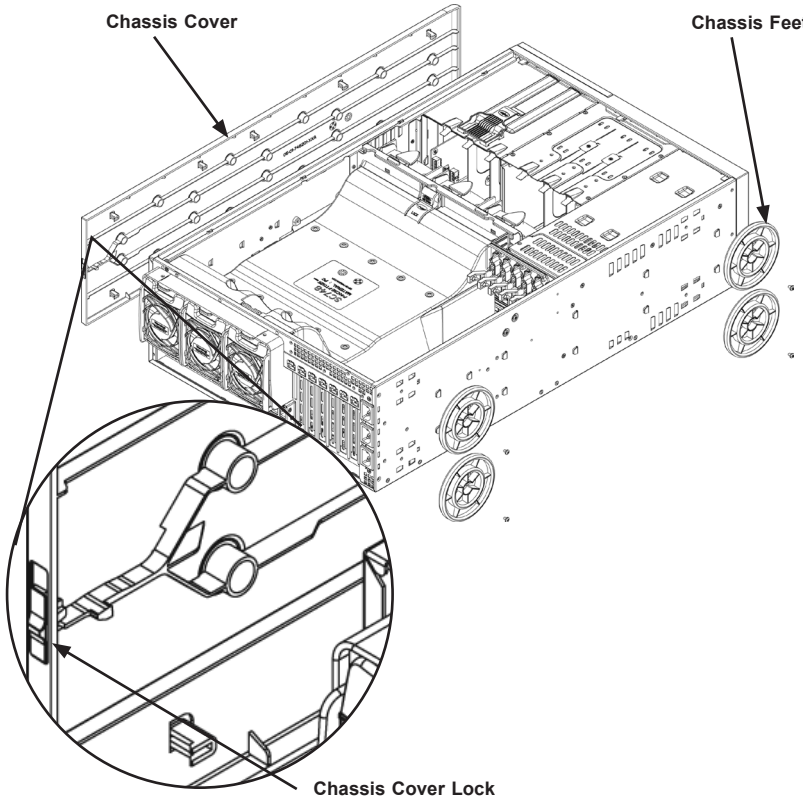


Figure 6-1. Remove Feet and Chassis Top Cover

Removing the Chassis Feet

1. Place the chassis on its side with the chassis side cover facing upward.
2. Remove the screw holding a chassis foot in place.
3. The foot lock is a tab located in the center of the foot that prevents the foot from sliding. Using a flat head screwdriver, **gently** lift the foot lock upward and slide the foot toward the rear of the chassis.
4. Repeat steps 2 and 3 with each remaining foot.

Identifying the Sections of the Rack Rails

The rail package includes two rack rail assemblies in the rack mounting kit. Each assembly consists of two sections: an inner fixed chassis rail that secures directly to the server chassis and an outer fixed rack rail that secures directly to the rack itself.

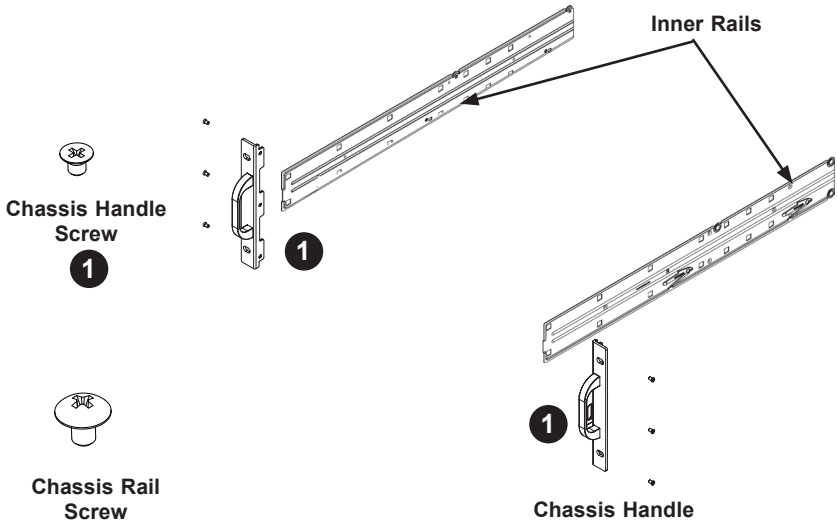


Figure 6-2. Identifying the Inner Rails and Chassis Handles

Installing the Chassis Handles and Inner Rails

1. Locate the chassis handles (2) and handle screws (6).

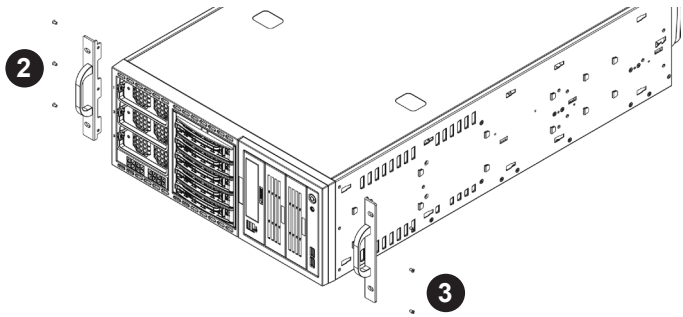


Figure 6-3. Identifying the Inner Rails and Chassis Handles

2. Align the chassis handle with the front of the chassis and secure with the three chassis handle screws.
3. Repeats steps 1 and 2 with the other handle.

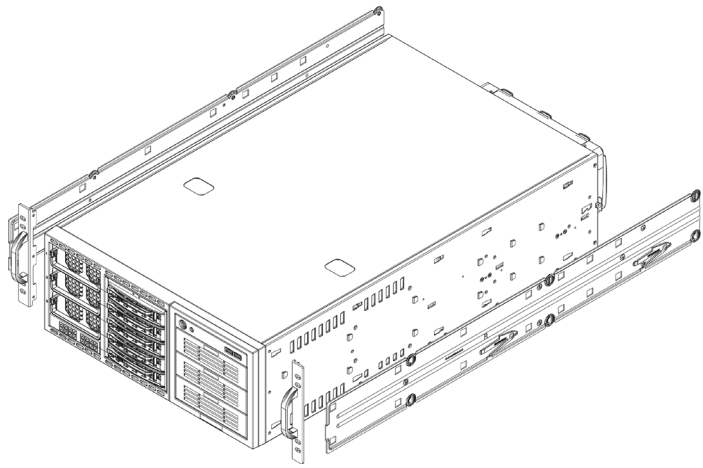


Figure 6-4. Installing the Inner Rack Rails

4. Locate the inner rails (2) and screws (12) in the shipping package.
5. Align the inner rails against the chassis, as shown. Confirm that the rails are flush against the edge of the chassis.
6. Tighten the screws. Do not over tighten.
7. Repeat steps 5 and 6 with the other inner rail.

Installing the Outer Rails to the Rack

1. Attach the front and rear short brackets to the outside of the long bracket. Both bracket ends must face the same direction.
2. Adjust both the brackets to the proper distance so that the rail fits snugly into the rack.

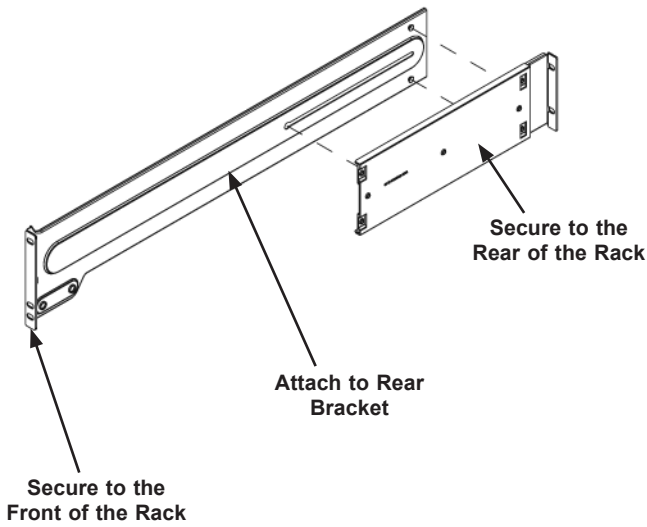


Figure 6-5. Assembling the Outer Rails
(The right side rail is pictured.)

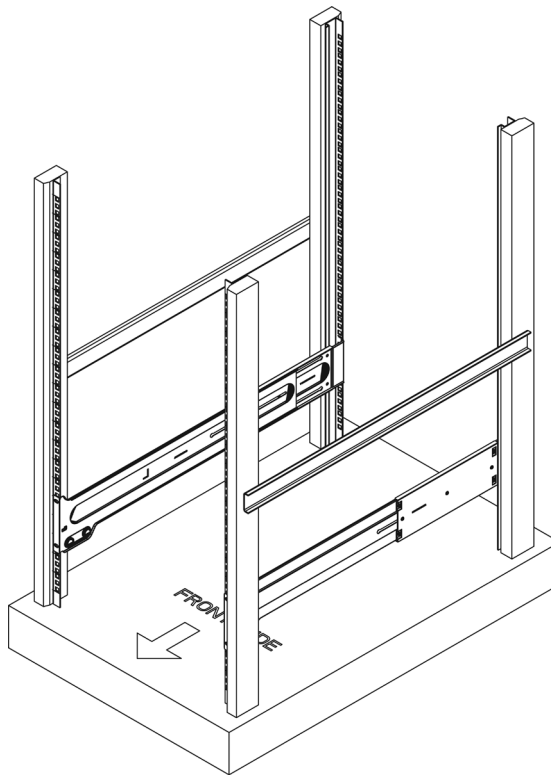


Figure 6-6. Installing the Rack Rails

Note: Figures are for illustrative purposes only. Always install servers into racks from the bottom up.

3. Secure the front side of the outer rail with two M5 screws and the rear side of the outer rail with three M5 screws. **Note:** The outer rail is adjustable from approximately 26" to 38.25".

4. Repeat steps 1-3 for the left outer rail.

Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over.

Installing the Chassis into a Rack

1. Confirm that chassis includes the inner rails and the outer rails.
2. Line chassis rails with the front of the rack rails (C).
3. Slide the chassis rails into the rack rails, keeping the pressure even on both sides (you may have to depress the locking tabs when inserting). When the server has been pushed completely into the rack, you should hear the locking tabs "click".

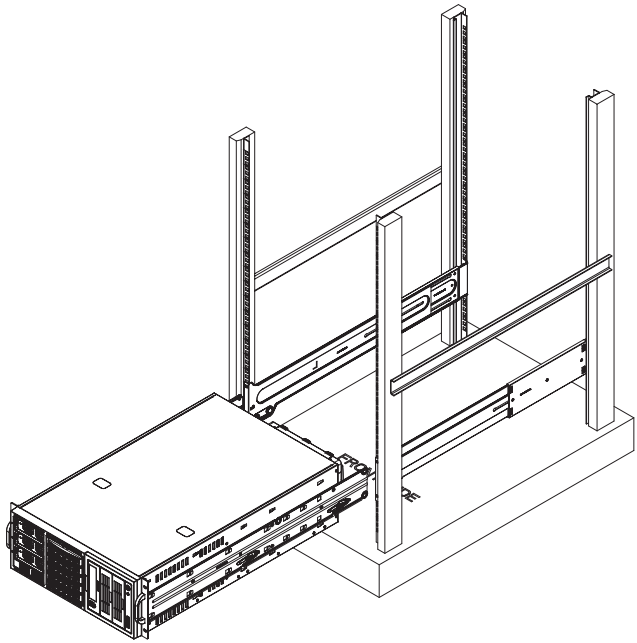


Figure 6-7. Installing the Chassis into a Rack

Warning: Do not pick up the server by the front handles. They are designed to pull the system from a rack only.

6-5 Tower Configuration Instructions

The SC748 chassis is shipped with the chassis cover and feet pre-installed. To use the chassis as a desktop server, no other installation is required. Use the instructions in this section if you have converted the chassis for rack use and need to return the chassis to tower mounting.

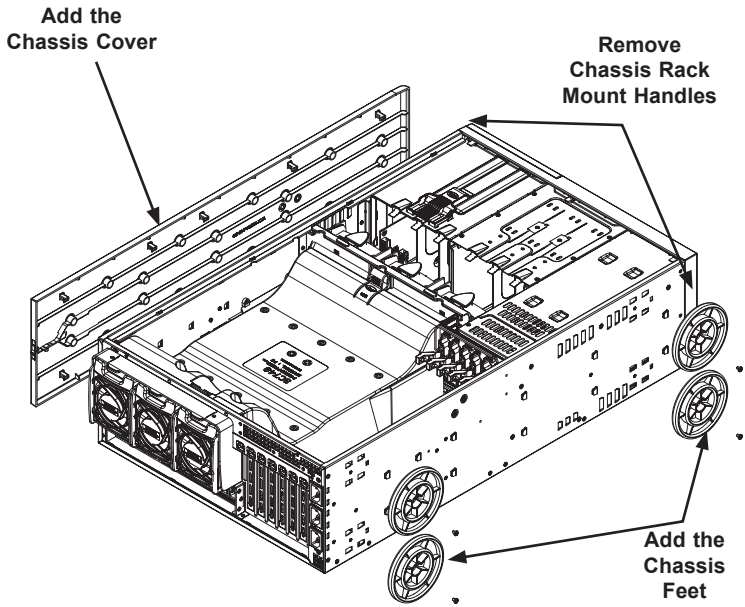


Figure 6-8. Adding Chassis Feet and Top Cover

Installing the Chassis Cover

1. Remove the rack mount handles.
2. Align the cover post with the corresponding holes on the top of the chassis and place the cover on top of the chassis. The cover should overhang approximately one-half inch over the front of the chassis.
3. Slide the chassis cover toward the rear of the chassis to lock the cover into place.

Placing the Chassis Feet

1. Place the chassis foot in the foot receptacle and slide the foot toward the front of the chassis. The foot should lock into place.
2. Secure the foot to the chassis using one screw enclosed in the packaging.
3. Repeat steps 1 and 2 for the remaining three chassis feet.

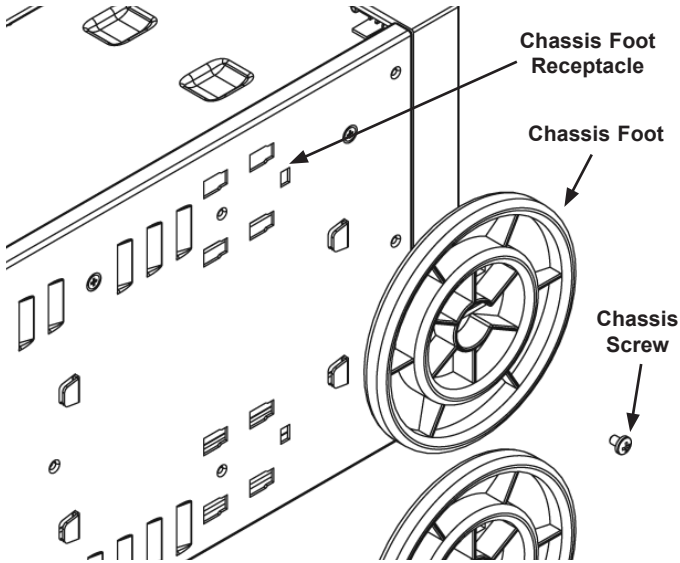


Figure 6-9. Replacing Chassis Feet

Appendix A

SC748 Chassis Cables

A-1 Overview

This appendix lists supported cables for your chassis system. It only includes the most commonly used components and configurations. For more compatible cables, refer to the manufacturer of the motherboard you are using and our Web site at: www.supermicro.com.

A-2 Cables Included with SC748TQ Chassis (SAS/SATA)

SC748TQ-R1200 and SC748TQ-R1000			
Part #	**Type**	**Length**	**Description**
CBL-0044L	Cable	24"	Serial ATA, lead-free
CBL-0051L	Cable	60cm	Round floppy cable
CBL-0084	Cable	6"	Split converter cable
CBL-0087	Ribbon, Round	20"	16 pin to 16 pin ribbon cable for control panel
CBL-0209L	Cable	210mm	4 to 3 pin fan power cable (3)

A-3 Compatible Cables

These cables are compatible with the SC748 Chassis.

Alternate SAS/SATA Cables

Some compatible motherboards have different connectors. If your motherboard has only one SAS connector that the SAS/SATA cables must share, use one of the following cables. These cables must be purchased separately.

Cable Name: SAS Cable **Quantity:** 1

Part #: CBL-0175L
Alt. Name: "Big Four"

Description: This cable has one SFF-8484 (32 pin) connector on one end and 4 SAS connectors (7 pins each) at the other. This cable connects from the Host (motherboard or other controller) to the backplane SAS hard drive port.

Cable Name: SAS Cable **Quantity:** 1

Part #: CBL-0116
Alt. Name: iPass or "Small Four"

Description: This cable has one ipass (SFF-8087/mini-sas) connector (36 pins) at one end and 4 SAS connectors on one end. This cable connects from the Host (motherboard or other controller) to the backplane SAS hard drive port.

Extending Power Cables

Although Super Micro chassis are designed with to be efficient and cost-effective, some compatible motherboards have power connectors located in different areas.

To use these motherboards you may have to extend the power cables to the mother boards. To do this, use the following chart as a guide.

Power Cable Extenders		
Number of Pins	**Cable Part #**	**Length**
24 pin	CBL - 0042	7.9"(20 CM)
20 pin	CBL - 0059	7.9"(20 CM)
8 pin	CBL - 0062	7.9"(20 CM)
4 pin	CBL - 0060	7.9"(20 CM)

Front Panel to the Motherboard

The SC748 chassis includes a cable to connect the chassis front panel to the motherboard. If your motherboard uses a different connector, use the following list to find a compatible cable.

Front Panel to Motherboard Cable (Ribbon Cable)		
Number of Pins (Front Panel)	**Number of Pins (Motherboard**	**Cable Part #**
16 pin	16 pin	CBL - 0049
16 pin	20 pin	CBL - 0048
20 pin	20 pin	CBL - 0047
16 pin	various*	CBL - 0068
20 pin	various*	CBL - 0067

* Split cables: Use these cable if your motherboard requires several different connections from the front panel.

Notes

Appendix B

SC748 Power Supply Specifications

This appendix lists power supply specifications for your chassis system.

SC748TQ-R1200B	
1200W Redundant high-efficiency power supply with PMBus	
MFR Part #	PWS-1K22-1R
Rated AC Voltage	100 - 240V 50 - 60Hz 6 - 15 Amp
+5V standby	4 Amp
+12V	100 Amp
With Power Distributer +5V	20 Amp
-12V	0.6 Amp
+3/3V	20 Amp

SC748TQ-R1400B	
1400W Redundant high-efficiency power supply with PMBus	
MFR Part #	PWS-1K41F-1R
Rated AC Voltage	1200W: 100 - 140V, 50 - 60Hz, 10.5 - 14.7 Amp 1400W: 180 - 240V, 50 - 60Hz, 7.2 - 9.5 Amp
+5V standby	6 Amp
+12V	100 Amp @ 100-140V 117 Amp @ 180-240V
With Power Distributer +5V	30 Amps
-12V	0.6 Amp
+3/3V	25 Amp

SC748TQ-R1K43B	
1400W Redundant High-efficiency AC power supply with Digital Switching Control & PMBus 1.2	
MFR Part #	PWS-1K43F-1R
Rated AC Voltage	100-240 V, 50-60 Hz, 15 Amp max
+5V standby	6 Amp
+12V	100 Amp @ 100-140V 117 Amp @ 180-240V
With Power Distributer +5V	30 Amps
-12V	0.6 Amp
+3/3V	25 Amp

Appendix C

CSE-M35TQ Mobile Rack Specifications

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

C-1 ESD Safety Guidelines

Electric Static Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing a component from the antistatic bag.
- Handle the RAID card by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the card and peripherals back into their antistatic bags when not in use.

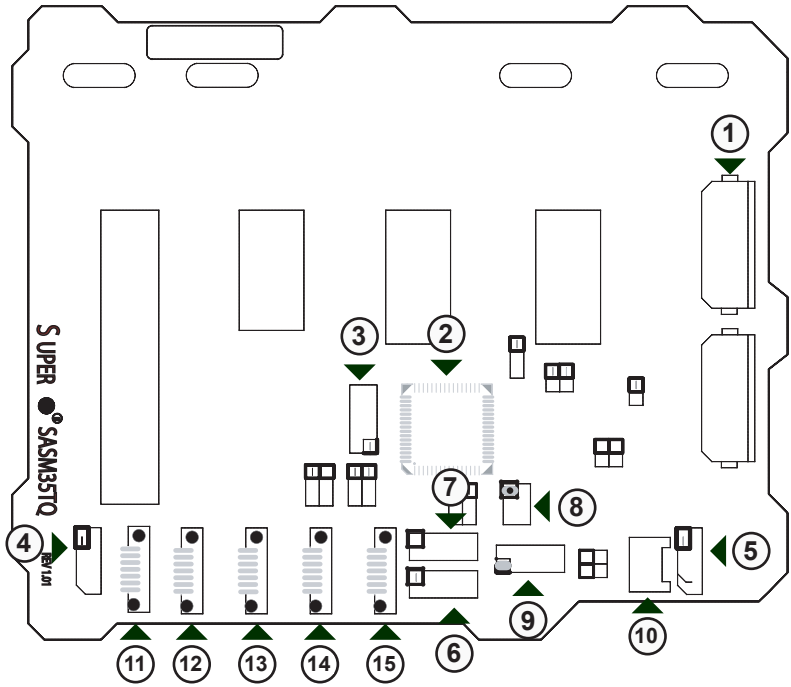
C-2 General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the mobile rack.
- Disconnect the power cable before installing or removing any cables from the mobile rack.
- Make sure that the mobile rack is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

C-3 An Important Note to Users

- All images and layouts shown in this user's guide are based upon the latest PCB Revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.

C-4 Front Connectors



Front Connectors

1. Power Connectors (4-pin): JP10 and JP13
2. Chip: MG 9072
3. JTAG JP47
4. I²C Connector #1 JP44
5. I²C Connector#2 JP45
6. SideBand Connector #1 JP51
7. SideBand Connector #2 JP52
8. Upgrade JP46
9. ACT IN JP26
10. FAN Connector JP22
11. SAS Port #0 J5
12. SAS Port #1 J6
13. SAS Port #2 J7
14. SAS Port #3 J8
15. SAS Port #4 J10

C-5 Front Connector and Pin Definitions

1. Mobile Rack Main Power Connectors

The 4-pin connectors, designated JP10 and JP13, provide power to the mobile rack. See the table on the right for pin definitions.

Mobile rack Main Power 4-Pin Connector (JP10 and JP13)

Pin#	Definition
1	+12V
2 and 3	Ground
4	+5V

2. MG9072 Chip

The MG9072 is an enclosure management chip that supports the SES-2 controller and SES-2 protocols.

3. JTAG Connector

The JTAG connector, designated JP47, is used for diagnostic purposes only. This connector should only be used a certified and experienced technician.

4. and 5. I²C Connectors

The I²C Connectors, designated JP44 and JP45, are used to monitor HDD activity and status. See the table on the right for pin definitions.

I²C Connector Pin Definitions (JP44 and JP45)

Pin#	Definition
1	Data
2	Ground
3	Clock
4	No Connection

6 and 7. Sideband Headers

The sideband headers are designated JP51 and JP52. For SES-2 to work properly, you must connect an 8-pin sideband cable. See the table to the right for pin definitions.

Sideband Headers (JP51 and JP52)

Pin #	Definition	Pin #	Definition
2	Mobile rack Addressing (SB5)	1	Controller ID (SB6)
4	Reset (SB4)	3	GND (SB2)
6	GND (SB3)	5	SDA (SB1)
8	Mobile rack ID (SB7)	7	SCL (SB0)
10	No Connection	9	No Connection

8. Upgrade Connector

The Upgrade connector, designated JP46, is used for diagnostic purposes only. This connector should only be accessed by a certified and experienced technician.

9. Activity LED Header

The activity LED header, designated JP26, is used to indicate the activity status of each SAS drive. For the Activity LED Header to work properly, connect using a 10-pin LED cable.

SAS Activity LED Header Pin Definitions (JP26)

Pin #	Definition	Pin #	Definition
1	ACT IN#0	6	ACT IN#4
2	ACT IN#1	7	ACT IN#5
3	ACT IN#2	8	ACT IN#6
4	ACT IN#3	9	ACT IN#7
5	Ground	10	Empty

10. Fan Connector

The 3-pin connectors, designated JP22, provide power to the mobile rack fan. See the table on the right for pin definitions.

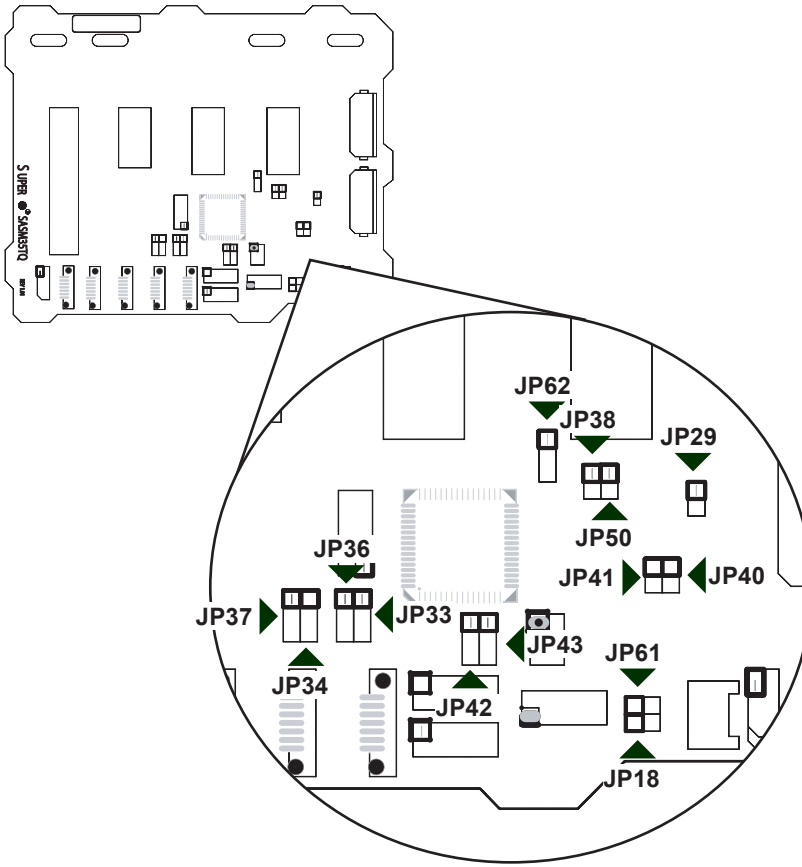
Fan Connectors (JP22)

Pin#	Definition
1	Ground
2	+12V
3	Tachometer

11 - 15. SAS Ports

The SAS ports are used to connect the SAS drive cables. The 5 ports are designated #0 - #4. Each port is also compatible with SATA drives.

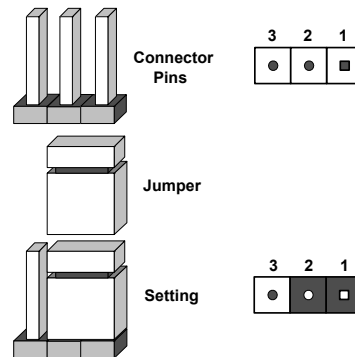
C-6 Front Jumper Locations and Pin Definitions



Explanation of Jumpers

To modify the operation of the mobile rack, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board.

Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.



Jumper Settings		
Jumper	**Jumper Settings**	**Notes**
JP18	Open: Enabled Closed: Disabled	Buzzer Reset
JP29	Open: Default Closed: Reset	9072 Chip Reset

Fan Jumper Settings

This mobile rack can use up to four fans. To utilize each fan, you must configure both jumpers as instructed below.

Fan Jumper Settings		
Jumper	**Jumper Settings**	**Note**
JP61	Closed: With Fan Open: No Fan	FAN#1
JP62	Pins 1-2: With Fan Pins 2-3: No Fan	FAN#1

I2C and SGPIO Modes and Jumper Settings

This mobile rack can utilize I2C or SGPIO. I2C is the default mode and can be used without making changes to your jumpers. The following information details which jumpers must be configured to use SGPIO mode or restore your mobile rack to I2C mode.

I²C Setting (Default)		
Jumper	**Jumper Setting**	**Note**
JP33	2-3	Controller ID #1
JP34	1-2:ID#0	Backplane ID #1
JP36	2-3	Controller ID #2
JP37	2-3:ID#1	Backplane ID #2
JP38	Closed	I²C Reset #2
JP40	Open	I²C Reset SDOUT #1
JP41	Open	I²C Reset SDOUT #2
JP42	2-3	Backplane ID SDIN #1
JP43	2-3	Backplane ID SDIN #2
JP50	Closed	I²C Reset #1

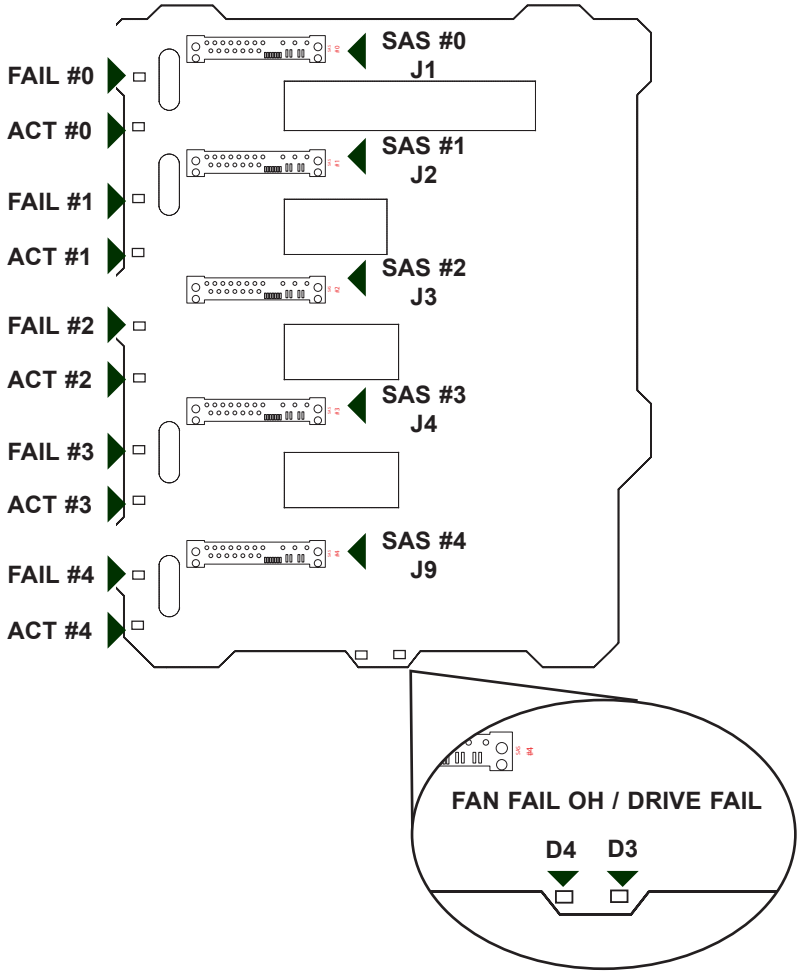
SGPIO Setting		
Jumper	**Jumper Setting**	**Note**
JP33	1-2	Controller ID #1
JP34	1-2:ID#0	Backplane ID #1
JP36	1-2	Controller ID #2
JP37	1-2:ID#0	Backplane ID #2
JP38	Open	I²C Reset #2
JP40	Closed	I²C Reset SDOUT #1
JP41	Closed	I²C Reset SDOUT #2
JP42	1-2	Blackplane ID SDIN #1
JP43	1-2	Blackplane ID SDIN #2
JP50	Open	I²C Reset #1

SAS Port Connections in I2C and SGPIO Settings

Use the following chart when connecting this mobile rack. If you connect the SAS ports out of order, you will not able to easily identify drives using the LED function.

SAS Port Connections in I2C and SGPIO Settings		
Port #	**I^2C**	**SGPIO**
0 - 3	I^2C #1	Sideband #1
4	I^2C #2	Sideband #2

C-7 Rear Connectors and LED Indicators



Rear SAS/SATA Connectors	
Rear Connector	**SAS Drive Number**
SAS #0	SAS/SATA HHD #0
SAS #1	SAS/SATA HHD #1
SAS #2	SAS/SATA HHD #2
SAS #3	SAS/SATA HHD #3
SAS #4	SAS/SATA HHD #4

Rear LED Indicators		
Rear LED	**Hard Drive Activity**	**Failure LED**
SAS #0	D12	D5
SAS #1	D13	D6
SAS #2	D14	D7
SAS #3	D15	D8
SAS #4	D18	D19

Mobile Rack Backplane LEDs		
LED	**Hard Drive Activity**	**Failure LED**
D3	ON	Overheat/Drive Failure LED indicator (Red light: flashing, buzzer on)
D4	ON	Overheat/Drive Failure LED indicator (Red light: flashing, buzzer on)

C-8 Installation Tools Needed

The following tools are neeed for the installation of the mobile rack into the chassis:

- Phillips head screwdriver
- Antistatic Strap (recommended)

C-9 Important Safety Guidelines for Installation

This product should be assembled and/or serviced by qualified and experienced technicians. To avoid personal injury and property damage, carefully follow the guidelines listed below.

Before accessing the Mobile Rack:

1. Turn off all peripheral devices and the power supply connected to the chassis and unplug all power cords from the system or the wall outlets.
2. Disconnect all the cables and label the cables for easy identification.
3. Use a grounded wrist strap designed to prevent static discharge when handling components.
4. Save all the screws and fasteners for later use. (If necessary, label these screws or fasteners for easy identification.)
5. Follow the instructions given in the following section to remove and install the cooling fan, hard disks and the rear window.

C-10 Connecting Cables to the Mobile Rack

Before connecting cables the mobile rack, you must remove the exhaust fan. In some circumstances, the backplane may need to be removed.

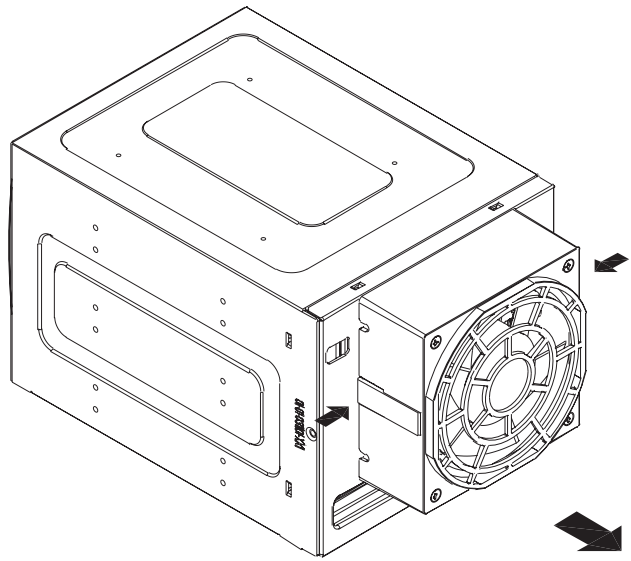


Figure C-1. Pinch the Tabs on the Mobile Rack Fan

Connecting SAS/SATA and Power Cables to the Mobile Rack:

1. Begin removing the exhaust fan by pinching the tabs on each side of the unit (as illustrated).

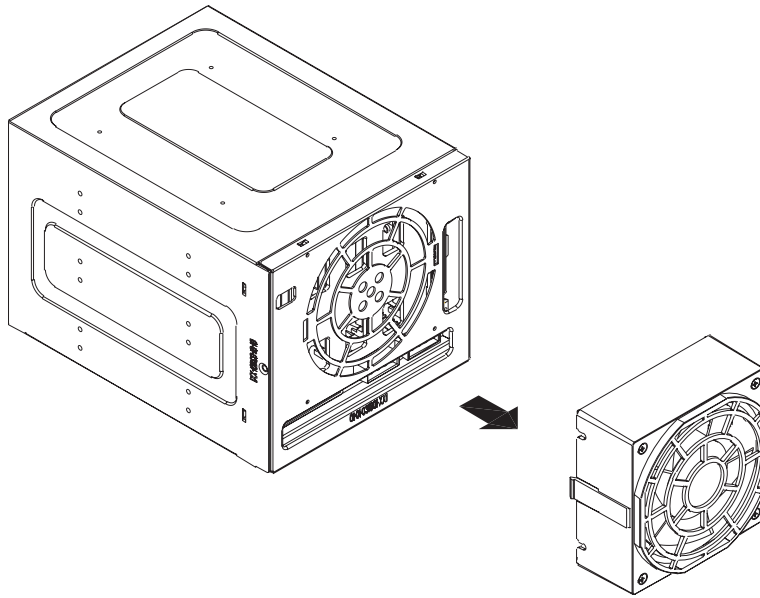


Figure C-2. Pull Fan from the Rack

2. Pull the exhaust fan from the chassis.

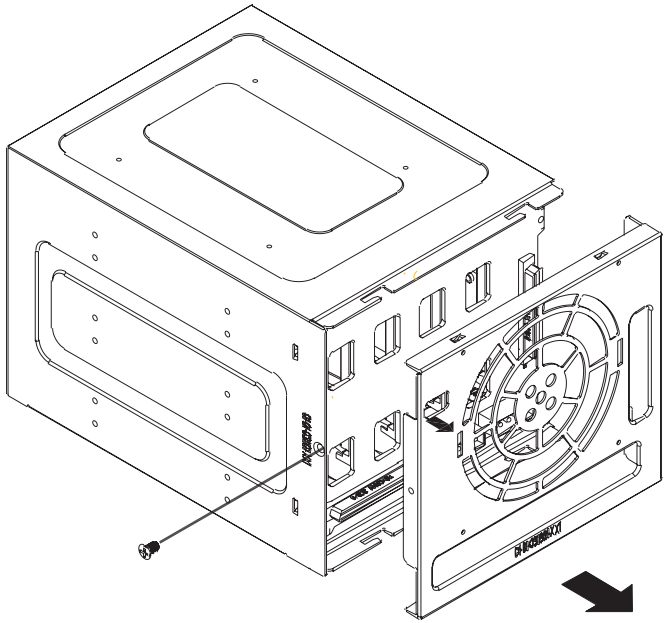


Figure C-3. Removing Bracket from Rack

3. Remove the bracket screw and pull the bracket from the mobile rack.
4. Connect the SAS cables and power cables to the mobile rack backplane.
5. Replace the bracket, bracket screw, and fan to the mobile rack.

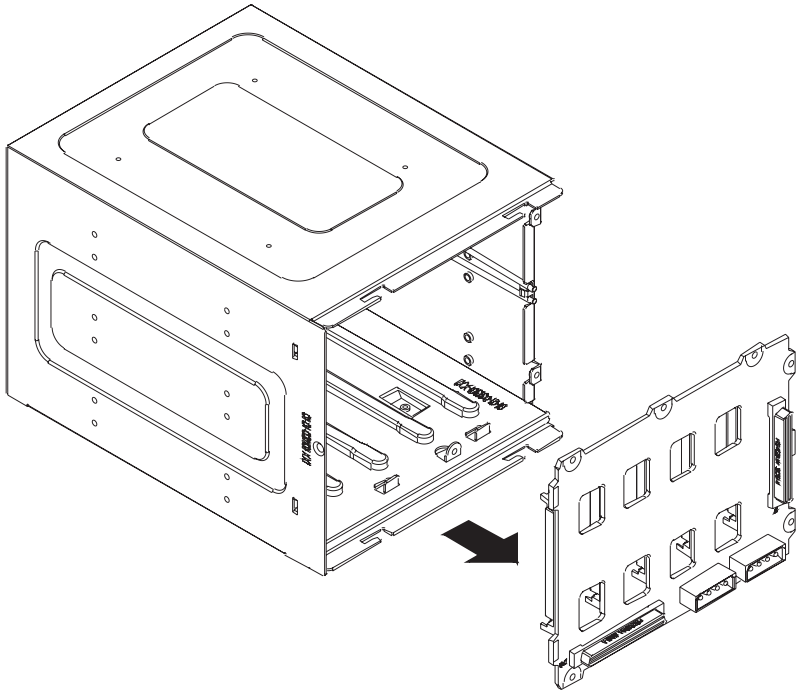


Figure C-4. Removing the Backplane from the Mobile Rack

Backplane Removal

The backplane may be separated from the mobile rack by removing the seven screws holding the backplane in place.

Notes

Disclaimer (cont.)

The products sold by Supermicro are not intended for and will not be used in life support systems, medical equipment, nuclear facilities or systems, aircraft, aircraft devices, aircraft/emergency communication devices or other critical systems whose failure to perform be reasonably expected to result in significant injury or loss of life or catastrophic property damage. Accordingly, Supermicro disclaims any and all liability, and should buyer use or sell such products for use in such ultra-hazardous applications, it does so entirely at its own risk. Furthermore, buyer agrees to fully indemnify, defend and hold Supermicro harmless for and against any and all claims, demands, actions, litigation, and proceedings of any kind arising out of or related to such ultra-hazardous use or sale.